

Final

# 6729 Montrose Road Niagara Falls, Ontario Noise Report

---



Prepared for Maple Hill Developments  
by IBI Group

September 2022

# Document Control Page

---

<b>CLIENT:</b>	Maple Hill Developments
<b>PROJECT NAME:</b>	McLeod/Montrose Road Development Niagara Falls, Ontario
<b>REPORT TITLE:</b>	6729 Montrose Road Niagara Falls, Ontario Noise Report
<b>IBI REFERENCE:</b>	126319
<b>VERSION:</b>	
<b>DIGITAL MASTER:</b>	\\caneast.ibigroup.com\J\HM\126319_McLeod-Montr\7.0_Production\7.03_Design\04_Civil\Noise\Report\CTR_Montrose-McLeod-2022-09-06.docx
<b>ORIGINATOR:</b>	Andy Kroess
<b>REVIEWER:</b>	
<b>AUTHORIZATION:</b>	
<b>CIRCULATION LIST:</b>	
<b>HISTORY:</b>	

# Table of Contents

---

<b>1</b>	<b>Introduction</b> .....	<b>1</b>
<b>2</b>	<b>Background and Noise Criteria</b> .....	<b>1</b>
2.1	Traffic Noise Criteria .....	2
2.2	Stationary Noise Criteria .....	2
<b>3</b>	<b>Noise Sources &amp; Modelling Methods</b> .....	<b>3</b>
3.1	Traffic Noise .....	3
3.2	Stationary Noise .....	4
3.2.1	On-site Sources .....	4
3.2.2	Off-site Sources .....	4
<b>4</b>	<b>Receiver Locations</b> .....	<b>6</b>
4.1	On-Site Receivers .....	6
<b>5</b>	<b>Results</b> .....	<b>7</b>
5.1	Traffic Noise Sources .....	7
5.2	Off-Site Stationary Noise Sources .....	9
<b>6</b>	<b>Conclusions and Recommendations</b> .....	<b>9</b>

# Table of Contents (continued)

---

## List of Tables

---

Table 1 – Traffic Noise Level Criteria .....	2
Table 2 – Stationary Noise Level Criteria .....	3
Table 3 – Traffic Data .....	4
Table 4 –Off-Site Stationary Noise Sources .....	5
Table 5 –Operating Times and Sound Power Levels .....	6
Table 6 –On-Site Traffic Noise Receiver Locations .....	6
Table 7 – On-Site Stationary Noise Receiver Locations .....	7
Table 8 – Predicted Un-Attenuated Traffic Noise Levels.....	8
Table 9 – Predicted Noise Levels from Off-Site Stationary Noise Sources (Daytime and Nighttime).....	9

## List of Appendices

---

Appendix A – Noise Information Plans
Appendix B – Appendix B – Traffic Information and STAMSON Output
Appendix C – Cadna A Output

# 1 Introduction

IBI Group was retained to undertake an environmental noise study to examine the impacts of traffic noise and stationary source noise for a proposed development at 6729 Montrose Road in the City of Niagara Falls.

The total site development area is approximately 2.4 ha and is located at the southwestern corner of Montrose Road and Charnwood Avenue, and the property is currently vacant. The proposed residential development will consist of 18 townhome blocks (91 units) from 2 storey to 3 storey high, landscaped areas, parking areas and private laneways.

Refer to the Noise Information Plan in Appendix A for a plan of the site and adjacent areas.

Montrose Road and the Queen Elizabeth Way (QEW) have been identified as potential traffic noise sources that need to be considered for the development. A review of the surrounding area has identified several potential stationary noise sources.

This report documents the noise analysis and findings to review the feasibility of the site from a noise perspective.

# 2 Background and Noise Criteria

The Ministry of Environment, Conservation and Parks (MECP, formerly MOE and MOECC) environmental noise guideline NPC-300 “Stationary and Transportation Sources – Approval and Planning” was used to determine the noise criteria for this project.

The primary noise sources that may impact the proposed residential sensitive receivers on the subject development are:

## 1. Traffic noise:

- Montrose Road;
- Queen Elizabeth Way (QEW).

## 2. Stationary noise:

- Existing off-site HVAC and mechanical equipment.

Note that potential proposed on-site stationary sources have not been determined at this stage of the project. Accordingly, only offsite potential stationary noise impacts will be investigated.

On review of the site location, it was determined that the proposed development is outside the zone of influence of airports and railways and therefore air and rail noise are assumed not to be an issue and will not be reviewed further in this report.

## 2.1 Traffic Noise Criteria

For road traffic noise, Section C6 and C7 of NPC-300 were used to determine the noise criteria for the development. The traffic noise criteria are summarized in Table 1.

**Table 1 – Traffic Noise Level Criteria**

LOCATION	NOISE LEVELS (DBA)	REQUIREMENT
Outdoor Living Areas (Daytime- 0700 to 2300)	Less than 55	i) No control required
	55-60	i) Physical control required -or- ii) Type A warning clause required
	Greater than 60	i) Physical control required -and- ii) Type B warning clause required
Outside Living Room Window (Daytime- 0700 to 2300)	Less than 55	i) No control required
	55-65	i) Forced air heating required -and- ii) Type C warning clause required
	Greater than 65	i) Central air conditioning required -and- ii) Type D warning clause required -and- iii) Special building components required
Outside Bedroom Window (Night time- 2300 to 0700)	Less than 50	i) No control required
	50-60	i) Forced air heating required -and- ii) Type C warning clause required
	Greater than 60	i) Central air conditioning required -and- ii) Type D warning clause required -and- iii) Special building components required

## 2.2 Stationary Noise Criteria

The stationary noise sources that may impact the proposed and existing adjacent residential sensitive receivers are rooftop equipment from both proposed on-site and existing offsite sources.

The MECP criteria for noise levels resulting from stationary noise sources is the greater of the ambient background noise level or the exclusionary noise levels summarized in Table 2.

**Table 2 – Stationary Noise Level Criteria**

TIME PERIOD	LOCATION	CLASS 1	CLASS 2	CLASS 3	CLASS 4
0700 – 1900	Outdoor Living Area	50 dBA	50 dBA	45 dBA	55 dBA
1900 – 2300	Outdoor Living Area	50 dBA	45 dBA	40 dBA	55 dBA
0700 – 1900	Plane of Window	50 dBA	50 dBA	45 dBA	60 dBA
1900 – 2300	Plane of Window	50 dBA	50 dBA	40 dBA	60 dBA
2300 – 0700	Plane of Window	45 dBA	45 dBA	40 dBA	55 dBA

Given the subject property is located in a major population center where the background sound level is dominated by urban hum, it will be assumed that the development and surroundings are located in a “Class 1” area (urban) as defined in NPC-300. Accordingly, the MECP exclusionary limits in Table 2 listed under “Class 1” apply.

Finally, for simplicity, it will be assumed that the exclusionary limits of Table 2 will be the applicable noise level criteria for this study (note, it is possible that the ambient noise level is higher and as such this is a conservative assumption).

As per Section ‘A’ of NPC-300, a Class 4 area is defined as an area or specific site that would otherwise be defined as Class 1 or 2 in which:

- is an area intended for development with new noise sensitive land uses that are not built yet;
- is in proximity to existing, lawfully established stationary sources; and
- has formal confirmation from the land use planning authority with Class 4 area classification which is determined during the land use planning process.

It should be noted that Section B7.1 of NPC-300 assumes that in Class 4 areas the windows are to remain closed.

### 3 Noise Sources & Modelling Methods

The following sections describe the identified noise sources.

#### 3.1 Traffic Noise

The traffic volume for the QEW were obtained from the Ministry of Ontario (MTO) website. The traffic volumes for Montrose Road were obtained from IBI Group traffic counts from August 10, 2022. Refer to Appendix A.

The MECP requires that all traffic data be projected ten (10) years into the future from the date of construction such that the proposed mitigation will be relevant for future volumes. Construction is planned for 2023 and the traffic volumes will thus be forecasted to 2033.

The provided traffic volumes along with other relevant traffic data are summarized in Table 3.

**Table 3 – Traffic Data**

ITEM	QEW (2016)	MONTROSE ROAD (2022)
AADT	45,100	4,972
Years of Growth	17	11
Growth Rate (%)	2.5	2.5
Medium Trucks (%)	2.5	1.4
Heavy Trucks (%)	2.5	2.4
Road Grade (%)	<2	<2
Speed Limit (km/h)	100	60
Day/Night Split (%)	66/34	90/10

The noise levels produced by road traffic along the QEW and Montrose Road were modelled/predicted utilizing MECP’s computer modelling software “STAMSON 5.04”.

## 3.2 Stationary Noise

The following noise sources were identified.

### 3.2.1 On-site Sources

At the time of the preparation of this report, on-site mechanical equipment information was not available. It is assumed that each townhome unit will include forced air central heating and cooling, and that there will not be additional outdoor communal HVAC units. Therefore, on-site stationary noise will not be considered further at this time.

### 3.2.2 Off-site Sources

Adjacent landowners were contacted by telephone in July 2022 to determine the potential stationary noise sources on their properties. Additional assumptions were made as to the position and type of rooftop equipment based on aerial imagery from Google Maps, and using typical sound power levels and operating times for such equipment. Table 4 summarizes the results.



**Table 4 –Off-Site Stationary Noise Sources**

COMPANY	ADDRESS	CONTACTED	HOURS OF OPERATIONS	EQUIPMENT	COMMENTS
Landscape Storage Site	6750 Montrose Rd	No	Assume Mon-Fri 8am-8pm	-	Assume 2 loaders/skidders
Can-Eng Furnaces International	6800 Montrose Rd	Yes	Tues-Fri 8am-8pm	No Response	2 Medium Rooftop HVAC
Hyde's Distribution	6868 Kinsmen Ct	Yes	Mon-Fri 8:30am-4:30pm	No Response	3 medium rooftop HVAC
For the Needy Not the Greedy	6934 Kinsmen Ct	Yes	Wed-Friday 9am-2pm	None	Assume 2 loaders/skidders, 2 forklifts, 11 Medium Rooftop HVAC
Devroomen Bulb Canada Inc.		Yes	Mon-Fri 6:30-4pm	2 forklifts, one electric	
Hi-Rel Alloys		Yes	Mon-Fri 8am-5pm	None	
Earthdance Landscaping		Yes	Mon-Sat 9am-7pm	No Response	
R&T Auctions		Yes	Mon-Sat 9am-5pm	None	
Graybar Canada	7000 Kinsmen Ct	Yes	Mon-Fri 7am-5pm	2 forklifts	Assume 2 forklifts, 4 Medium Rooftop HVAC
Framar		Yes	Mon-Fri 8:30am-4:30pm	No Response	
Niagara Go-Karts	7104 Kinsmen Ct	Yes	Everyday 10am-10pm	40 Gas Powered Go-Karts at once	Assume 40 Gas Powered Go-Karts.
Hamblet's Roofing Siding Windows	7130 Kinsmen Ct	Yes	Mon-Fri 9am-4:30pm	None	No noise sources
Commercial Plaza	7835 McLeod Rd	No	Daily 7am-10pm	-	Assume 17 Medium Rooftop HVAC
Lowe's Home Improvement	7959 McLeod Rd	No	Daily 7am-10pm	-	Assume 2 forklifts, 1 idling truck, 11 Large Rooftop HVAC

Table 5 summarizes the operating times and sound power levels for the various off-site equipment.

**Table 5 –Operating Times and Sound Power Levels**

EQUIPMENT	OPERATING TIME		SOUND POWER LEVEL (DBA)
	Day	Night	
HVAC Medium	45 min/hour	30 min/hour	75
HVAC Large	45 min/hour	30 min/hour	90
Forklifts	45 min/hour	-	90
Loaders/Skidders	45 min/hour	-	90
Gas-Powered Go Karts	Steady-State	-	102
Idling Truck	Steady-State	-	100

The noise levels produced by stationary noise sources were modeled/predicted utilizing Cadna A v2022 by DataKustik. This software is recognized in the industry for noise modeling and utilizes ISO 9613-2.

## 4 Receiver Locations

To facilitate analysis and description, sensitive Receiver locations were established and labeled. These Receivers were located at worst case locations (most exposed). Note, for indoor daytime and nighttime noise, the receiver is located flush with the outside of living room and bedroom windows.

### 4.1 On-Site Receivers

Sensitive receiver locations were established on the proposed development’s townhomes. These on-site receiver locations are shown on the Noise Information Plan in Appendix A. The Outdoor Living Areas (OLAs) are located 3m from the building façades.

The onsite sensitive receivers for traffic noise are summarized in Table 6.

**Table 6 –On-Site Traffic Noise Receiver Locations**

RECEIVER	LOCATION	DISTANCE FROM CENTRELINE QEW (M)	DISTANCE FROM CENTRELINE MONTROSE RD (M)
Receiver A	Southwest Corner – Southwest Facade (Floors 1 to 3) and OLA	458.7	88.9
Receiver B	Southwest Corner – Southeast Facade (Floors 1 to 3) and OLA	402.4	26.2
Receiver C	Southwest Corner – East Facade (Floors 1 to 3) and OLA	346.6	23.9
Receiver D	Southwest Corner – East Facade (Floors 1 to 3) and OLA	315.7	20.8
Receiver E	Southwest Corner – East Facade (Floors 1 to 3) and OLA	341.5	51.0

The onsite stationary noise sensitive receiver locations are summarized in Table 7, and represent the worst-case sensitive receiver locations.

**Table 7 – On-Site Stationary Noise Receiver Locations**

RECEIVER	LOCATION	FLOORS
Receiver S1	Proposed Townhouse-Southeast Façade	1 to 3
Receiver S2	Proposed Townhouse-Southwest Façade	1 to 3
Receiver S3	Proposed Townhouse-East Façade	1 to 3
Receiver S4	Proposed Townhouse-East Façade	1 to 3
Receiver S5	Proposed Townhouse-East Façade	1 to 3
Receiver S5	Proposed Townhouse-East Façade	1 to 3

## 5 Results

The following sections review the modelled/predicted onsite and offsite noise impacts.

### 5.1 Traffic Noise Sources

STAMSON was used to model and predict noise levels and the output results are included in Appendix B, and summarized in Table 8. Note, the intermediate surface between the noise source and the receivers were modelled as having an absorptive intermediate surface.

**Table 8 – Predicted Un-Attenuated Traffic Noise Levels**

RECEIVER	DAYTIME (DBA)	NIGHTTIME (DBA)	CRITERIA DAY/NIGHT (DBA)
<b>A</b>			55 / 50
Floor 1	50	49	55 / 50
Floor 2	51	50	55 / 50
Floor 3	53	51	55 / 50
OLA	50	-	55 / -
<b>B</b>			55 / 50
Floor 1	59	55	55 / 50
Floor 2	60	56	55 / 50
Floor 3	60	57	55 / 50
OLA	60	-	55 / -
<b>C</b>			55 / 50
Floor 1	60	56	55 / 50
Floor 2	60	56	55 / 50
Floor 3	61	57	55 / 50
OLA	61	-	55 / -
<b>D</b>			55 / 50
Floor 1	61	57	55 / 50
Floor 2	61	57	55 / 50
Floor 3	62	58	55 / 50
OLA	62	-	55 / -
<b>E</b>			55 / 50
Floor 1	53	51	55 / 50
Floor 2	54	52	55 / 50
Floor 3	55	53	55 / 50
OLA	53	-	55 / -

As outdoor noise levels at Receivers B, C, and D exceed 60 dBA during the daytime and 55 dBA during the nighttime, provision for air conditioning and warning clauses are required.

The noise levels at OLAs for rear yard areas at Receivers B, C, and D are greater than 60 dBA, and therefore require a 1.8m high noise fence and warning clause.

## 5.2 Off-Site Stationary Noise Sources

The identified stationary noise sources were modelled in Cadna A and noise levels at the identified receivers were established. Table 9 summarizes noise levels and Appendix C contains the modelling results.

**Table 9 – Predicted Noise Levels from Off-Site Stationary Noise Sources (Daytime and Nighttime)**

FLOOR	RECEIVER NOISE LEVEL (DAYTIME/NIGHTTIME) DBA											
	REC S1		REC S2		REC S3		REC S4		REC S5		REC S6	
	DAY	NIGHT	DAY	NIGHT	DAY	NIGHT	DAY	NIGHT	DAY	NIGHT	DAY	NIGHT
1	55	39	54	40	54	35	54	33	52	32	42	30
2	56	39	54	41	54	37	54	34	53	33	48	31
3	56	40	54	41	54	39	55	36	53	33	52	34

As shown in Table 9, the noise levels produced by the proposed off-site stationary noise sources exceed 50 dBA during the daytime and do not exceed 45 dBA during the nighttime at the on-site receiver locations. Accordingly, noise mitigation will be required as a result of the off-site stationary noise sources.

Since it is not feasible to install barriers to mitigate noise from existing off-site sources, a Class 4 designation could be applied to the property to allow for higher stationary noise exclusion limits (60 dBA daytime). The unattenuated noise levels from off-site sources at Receivers S1 to S6 would meet the Class 4 exclusion limits.

A Type E warning clause referenced from Section C8.2 of NPC-300 Guidelines must also be included on the Tenancy Agreement for each impacted dwelling unit.

## 6 Conclusions and Recommendations

Given the results of this analysis, the following recommendations are provided:

### Traffic Noise

#### **Recommendation #1 (All Units)**

Due to the exceedance of MECP noise criteria for daytime and nighttime acoustical levels from Montrose Road and the QEW, all residential units are to be fitted with the provision for central air conditioning. Further, these residential units shall include a Type 'C' Warning Clause:

*“This dwelling unit has been designed with the provision for adding central air conditioning at the occupant’s discretion. Installation of central air conditioning by the occupant in low and medium density developments will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the sound level limits of the Municipality and the Ministry of the Environment.”*

### **Recommendation #2 (All Units Backing onto Montrose Road)**

Due to the exceedance of MECP noise criteria for daytime acoustical levels from Montrose Road and the QEW at outdoor living areas, all units backing onto Montrose Road shall include a Type 'B' Warning Clause:

*“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.”*

and,

That a 1.80m high noise fence be installed to break the line-of-sight between Montrose Road and the OLAs for the units backing onto Montrose Road. The fence shall be of a minimum density of 20 kg/m<sup>2</sup> and be free of any holes or gaps.

### **Stationary Noise**

#### **Recommendation #3 (All Units)**

That a Class 4 designation be applied to the site to attenuate noise levels from off-site stationary noise sources.

#### **Recommendation #4 (All Units)**

Due to the exceedance of MECP noise criteria for daytime acoustical levels from off-site stationary noise sources, all units shall include a Type 'E' Warning Clause:

*“Purchasers/tenants are advised that due to the proximity of the adjacent commercial buildings, noise from the buildings' HVAC equipment may at times be audible.”*

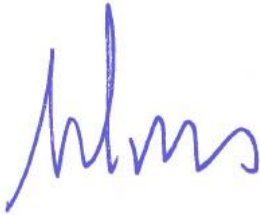
#### **Recommendation #5**

At time of final building design, the building layouts and any proposed on-site mechanical equipment and their noise profiles shall be verified as to their conformance with those assumed in this study. If differences are identified, an updated noise analysis or addendum shall be completed to review the noise impact and determine if additional mitigation is required.

Based on the preceding we conclude that the subject development can be designed appropriately to address noise impacts.

\* \* \* \* \*

Yours truly  
**IBI GROUP**

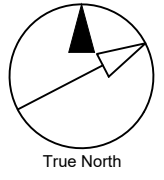


Andy Kroess, M.Eng., P.Eng.


# Appendix A – Noise Information Plan

---





**LEGEND**

 NOISE RECEIVER LOCATION

CLIENT  
**MAPLE HILL DEVELOPMENTS**

PROJECT NAME  
**6729 MONTROSE ROAD**  
 6729 MONTROSE ROAD,  
 NIAGARA FALLS, ON

SCALE:  
**1:1000**

PROJECT MGR:  
**A.K.**

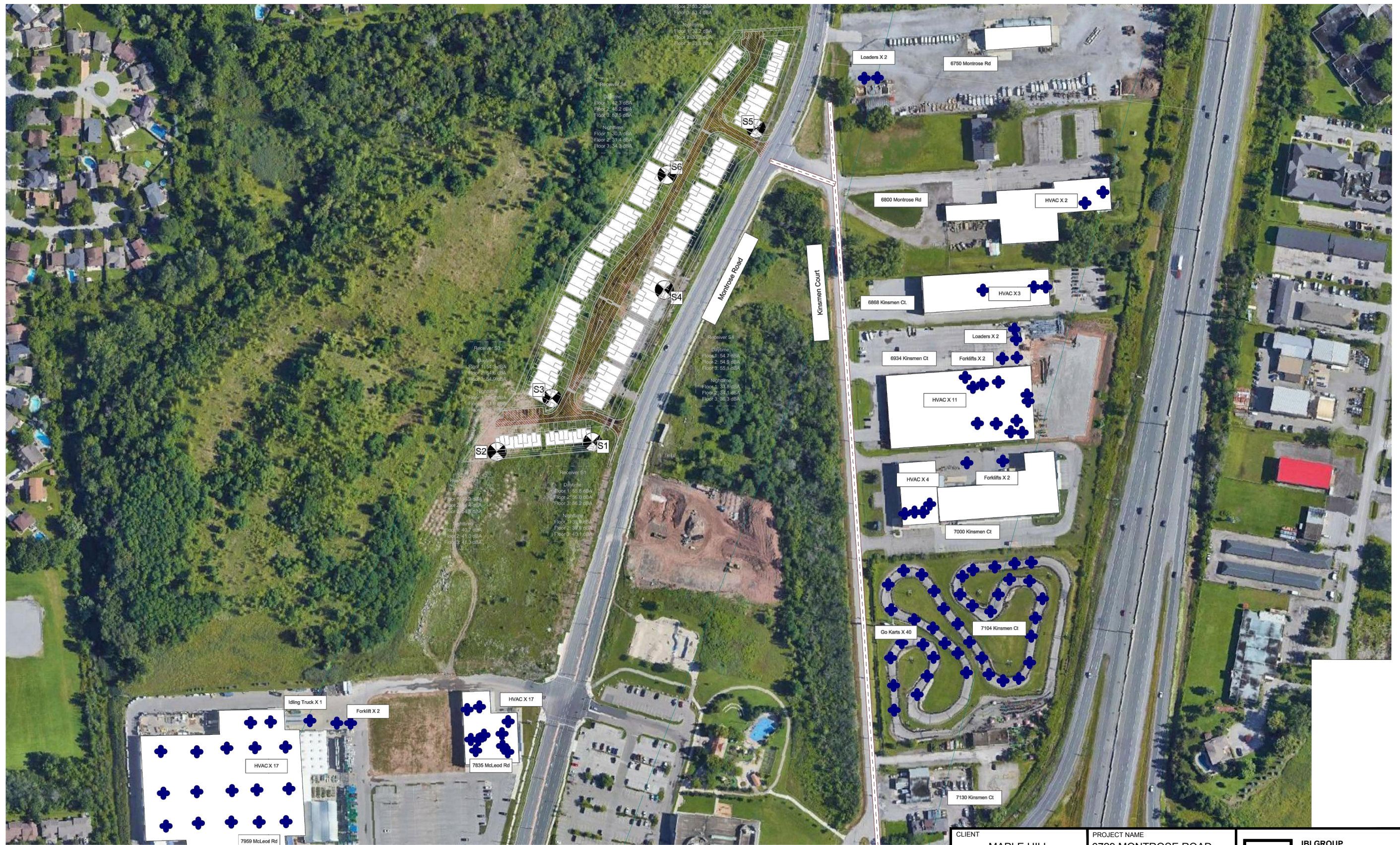
CHECKED BY:  
**A.K.**

PROJECT NO:  
**126319**

**IBI GROUP**  
 Suite 200 - 360 James Street North  
 Hamilton ON L8L 1H5 Canada  
 tel 905 546 1010 fax 905 546 1011  
 ibigroup.com

FIGURE NAME  
**NOISE INFORMATION PLAN - TRAFFIC**

FIGURE NO.	REVISION
1	0



Receiver S6  
 Daytime  
 Floor 1: 42.3 dBA  
 Floor 2: 41.2 dBA  
 Floor 3: 59.6 dBA  
 Nighttime  
 Floor 1: 30.7 dBA  
 Floor 2: 31.4 dBA  
 Floor 3: 34.3 dBA


Receiver S3  
 Daytime  
 Floor 1: 54.1 dBA  
 Floor 2: 54.6 dBA  
 Floor 3: 54.9 dBA  
 Nighttime  
 Floor 1: 33.8 dBA  
 Floor 2: 34.1 dBA  
 Floor 3: 35.3 dBA

Receiver S1  
 Daytime  
 Floor 1: 55.8 dBA  
 Floor 2: 56.0 dBA  
 Floor 3: 56.2 dBA  
 Nighttime  
 Floor 1: 35.8 dBA  
 Floor 2: 37.9 dBA  
 Floor 3: 40.1 dBA

Receiver S4  
 Daytime  
 Floor 1: 54.7 dBA  
 Floor 2: 54.9 dBA  
 Floor 3: 55.1 dBA  
 Nighttime  
 Floor 1: 33.8 dBA  
 Floor 2: 34.1 dBA  
 Floor 3: 35.3 dBA

Receiver S1  
 Daytime  
 Floor 1: 55.8 dBA  
 Floor 2: 56.0 dBA  
 Floor 3: 56.2 dBA  
 Nighttime  
 Floor 1: 35.8 dBA  
 Floor 2: 37.9 dBA  
 Floor 3: 40.1 dBA

Receiver S5  
 Daytime  
 Floor 1: 42.3 dBA  
 Floor 2: 41.2 dBA  
 Floor 3: 59.6 dBA  
 Nighttime  
 Floor 1: 30.7 dBA  
 Floor 2: 31.4 dBA  
 Floor 3: 34.3 dBA

CLIENT <b>MAPLE HILL DEVELOPMENTS</b>		PROJECT NAME <b>6729 MONTROSE ROAD</b>		 <b>IBI GROUP</b> Suite 101 - 410 Albert Street Waterloo ON N2L 3V3 Canada tel 519 585 2255 <a href="http://ibigroup.com">ibigroup.com</a>	
6729 MONTROSE ROAD, NIAGARA FALLS, ON		6729 MONTROSE ROAD, NIAGARA FALLS, ON			
SCALE: N.T.S.	DATE: 2022-09-28	FIGURE NAME NOISE INFORMATION PLAN STATIONARY NOISE		FIGURE NO. 2	REVISION 0
PROJECT MGR: A.K.	DRAWN BY: I.A.				
CHECKED BY: A.K.	APPROVED BY: A.K.				
PROJECT NO: 126319					

# Appendix B – Traffic Information and STAMSON Output

---

# Montrose Rd @ Kinsmen Crt

## Morning Peak Diagram

### Specified Period

**From:** 7:00:00

**To:** 9:00:00

### One Hour Peak

**From:** 8:00:00

**To:** 9:00:00

**Municipality:** Niagara Falls  
**Site #:** 0000000002  
**Intersection:** Montrose Rd & Kinsmen Crt  
**TFR File #:** 2  
**Count date:** 10-Aug-2022

**Weather conditions:**  
 Cloudy/Dry  
**Person(s) who counted:**  
 Cam

**\*\* Non-Signalized Intersection \*\***

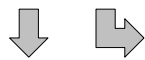
**Major Road:** Montrose Rd runs N/S

North Leg Total: 426  
 North Entering: 248  
 North Peds: 0  
 Peds Cross:  $\times$

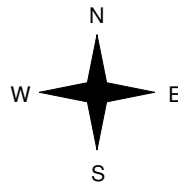
Heavys	6	1	7
Trucks	2	0	2
Cars	217	22	239
<b>Totals</b>	<b>225</b>	<b>23</b>	<b>248</b>

Heavys	7
Trucks	10
Cars	161
<b>Totals</b>	<b>178</b>

East Leg Total: 116  
 East Entering: 28  
 East Peds: 6  
 Peds Cross:  $\times$



Montrose Rd



	Cars	Trucks	Heavys	Totals
Northbound	10	0	0	10
Southbound	16	1	1	18
<b>Total</b>	<b>26</b>	<b>1</b>	<b>1</b>	

Kinsmen Crt



	Cars	Trucks	Heavys	Totals
Westbound	84	2	2	88

Montrose Rd



Cars	233	Cars	151	62	213
Trucks	3	Trucks	10	2	12
Heavys	7	Heavys	7	1	8
<b>Totals</b>	<b>243</b>	<b>Totals</b>	<b>168</b>	<b>65</b>	

Peds Cross:  $\times$   
 South Peds: 0  
 South Entering: 233  
 South Leg Total: 476

## Comments

# Montrose Rd @ Kinsmen Crt

## Afternoon Peak Diagram

### Specified Period

**From:** 16:00:00

**To:** 18:00:00

### One Hour Peak

**From:** 16:15:00

**To:** 17:15:00

**Municipality:** Niagara Falls  
**Site #:** 000000002  
**Intersection:** Montrose Rd & Kinsmen Crt  
**TFR File #:** 2  
**Count date:** 10-Aug-2022

**Weather conditions:**  
 Cloudy/Dry  
**Person(s) who counted:**  
 Cam

**\*\* Non-Signalized Intersection \*\***

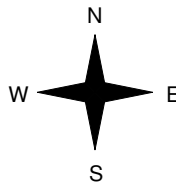
**Major Road:** Montrose Rd runs N/S

North Leg Total: 817  
 North Entering: 357  
 North Peds: 0  
 Peds Cross:  $\times$

Heavys	4	0	4
Trucks	3	0	3
Cars	341	9	350
Totals	348	9	357

Heavys	12
Trucks	3
Cars	445
Totals	460

East Leg Total: 169  
 East Entering: 143  
 East Peds: 7  
 Peds Cross:  $\times$



	Cars	Trucks	Heavys	Totals
Northbound	58	0	0	58
Southbound	82	1	2	85
<b>Totals</b>	<b>140</b>	<b>1</b>	<b>2</b>	

Kinsmen Crt



	Cars	Trucks	Heavys	Totals
Eastbound	25	0	1	26

Cars	423
Trucks	4
Heavys	6
Totals	433

Cars	387	16	403
Trucks	3	0	3
Heavys	12	1	13
Totals	402	17	

Peds Cross:  $\times$   
 South Peds: 0  
 South Entering: 419  
 South Leg Total: 852

### Comments

$$\text{AADT} = \text{Total AM Peak} + \text{Total PM Peak} / 4 \times 16 = 4,972$$



Ministry of  
Transportation

Highway  
Standards  
Branch

Traffic  
Office

---

## **Provincial Highways**

## **Traffic Volumes**

## **2016**

King's Highways / Secondary Highways / Tertiary Roads

### **Ministry Contact:**

Traffic Office (905)-704-2960

### **Abstract:**

This annual publication contains averaged traffic volume information for each of the sections of highway under MTO jurisdiction for the year 2016 only.

### **Key Words:**

Annual Average Daily Traffic volume (AADT)

## PREFACE

---

Traffic volume information is used by many people to assist them in assessing the viability of business proposals, land use options, marketing, advertising, and a host of other activities. This publication, **Provincial Highways Traffic Volumes 2016 (AADT Only)**, provides traffic volumes on an annual and seasonal average basis for selected links in the provincial highway network.

Some highway routes which have not yet been assigned an official highway number, are included under the title Selected 7000 Series Highways. **The Highway 407 ETR is maintained by 407 ETR Concession Company Ltd. and is not included in this publication. For information contact the 407 ETR Traffic Department at (905) 265-4070.** Site or time specific information not

contained herein may be obtained from the Ministry of Transportation's Regional Traffic Sections, located in London, Toronto, Kingston, North Bay and Thunder Bay. Contact MTO INFO at 1-800-268-4686 for the appropriate regional phone number.

The statistics contained herein have been prepared based on data (both electronic and otherwise) obtained from sources considered to be reliable. The Ministry makes no representation or warranty, expressed or implied with respect to its accuracy or completeness. This publication also supersedes any previously published publications.

## TABLE OF CONTENTS

PAGE NO.

---

Introduction	ii
Definitions	ii

### **TRAFFIC VOLUME INFORMATION**

The King's Highways	- Queen Elizabeth Way (QEW)	1
	- Highway 2 to Highway 148	2
	- The 400 series (Highways 400 to Highway 427)	32
The Secondary Highways	- Highway 502 to Highway 673	41
The Tertiary Roads	- Highway 802 to Highway 811	51
Selected 7000 Series Highways	- Highway 7025 to Highway 7910	51



## **INTRODUCTION**

This publication contains information pertaining to traffic volumes on roads under Provincial jurisdiction as of December 31, 2016.

## **TRAFFIC VOLUME INFORMATION**

A detailed listing outlining the 2016 annual average daily traffic volumes on Provincial Highways (King's, Secondary, Tertiary Roads and the 7000 series highways) is provided.

The highway network is divided into approximately 1877 sections for reporting purposes. Although local conditions cause variations in the volume within the sections, the volumes shown are considered to adequately represent the section.

On highways that overlap another highway, for instance Highway 35 and Highway 115, the volume information is referenced to the lower number highway. When an overlap occurs between a freeway and non-freeway, reference is made to the freeway route number. The freeways are Highway 400 to Highway 427 and the QEW.

The following are definitions to reading the listings:

**Location Description:** A statement identifying the start or ending point of a section. Some frequently used abbreviations include:

<b>BDY</b>	boundary
<b>BR</b>	bridge
<b>C</b>	concession
<b>CTY</b>	county
<b>DIST</b>	district
<b>KM</b>	kilometres
<b>AVE</b>	avenue
<b>REG</b>	regional
<b>HWY</b>	highway
<b>IC</b>	interchange
<b>JCT</b>	junction
<b>L</b>	lot
<b>LN</b>	line
<b>LTS</b>	limits
<b>NA</b>	non assumed*
<b>OH</b>	overhead
<b>OP</b>	overpass
<b>PKWY</b>	parkway
<b>R</b>	river
<b>RD</b>	road
<b>ST</b>	street
<b>TWP</b>	township
<b>UP</b>	underpass

\*Non Assumed – indicates that the roadway is not under provincial jurisdiction therefore contact the corresponding regional municipality for traffic volume information.

### Distance (KM)

The length of the section in kilometres reported to one decimal place.

### Pattern Type

One of 14 pattern types that represent the seasonal variation of the traffic flow on the section indicated. A graphical presentation of these pattern types has been included on the following page.

The 14 pattern types represent the traffic flow variation on the whole network. They include:

### Variation Types

<b>LOW</b>	<b>UC</b>	urban commuter
	<b>SC</b>	suburban commuter
	<b>C</b>	commuter
<b>INTER</b>	<b>IC</b>	intermediate commuter
	<b>CR</b>	commuter recreation
	<b>IR</b>	intermediate recreation
	<b>CTR</b>	commuter tourist recreation
	<b>IT</b>	intermediate tourist
<b>HIGH</b>	<b>LT</b>	low tourist
	<b>T</b>	tourist
	<b>HT</b>	high tourist
	<b>LR</b>	low recreation
	<b>R</b>	recreation
	<b>HR</b>	high recreation
	<b>UNKN</b>	unknown
	<b>UNCL</b>	unclassified
	<b>NEW</b>	new volume section

The first three are generally referred to as Low Variation Curves (or commuter travel); the next five as Intermediate Variation Curves (a blend of all types of traffic); and the last six as High Variation Curves. For the last group, the first three represent tourist travel and the second three, recreational travel; this sub-grouping is distinguished by the relationship of weekend to weekday traffic.

There are two additional codes in the pattern type column. "UNC" indicates that the AADT was calculated using adjustment factors from an unclassified (i.e. new) permanent counting station. "NEW" indicates that this is a new volume section and there is insufficient data to assign a pattern type.

### AADT

Annual Average Daily Traffic; defined as the average twenty four hour, two way traffic for the period January 1<sup>st</sup> to December 31<sup>st</sup>.

### NOTES:

(a) The user of this publication should realize that the reported data are 'estimated values'. Since traffic volumes are not static, direct field measurements are accurate only for the time of the count. Also, the size of the Provincial Highway network makes it impractical to measure each section annually. Thus, approximately one third of the reported sections are counted each year. The following three methods of measuring traffic volumes are employed:

1. Permanent Counting Stations: At designated locations across the Province counts are taken for each hour of the year.
2. Inventory Counting Stations: Each unique volume section has a set location where traffic volumes are sampled on a cyclical basis by season and year.
3. Request Counting Stations: Traffic volumes are measured at random locations as needed to address operational or planning concerns.

Using the available traffic volume information and historical trends, estimates are made for each highway section.

- (b) The abbreviation "N/A" (Not Available) refers to a new volume section or where no data is available. Data for these sections should be available in future publication once collected.
- (c) There may be some missing or incorrect traffic sections, and distances, due to highway realignment, highway transfers, renumbering, or sections which have been recently built.

### **TRAFFIC VOLUME INFORMATION**

The King's Highways	- Queen Elizabeth Way (Q.E.W.) - Highway 2 to Highway 148 - The 400 series (Highway 400 to Highway 427)
The Secondary Highways	- Highway 502 to Highway 673
The Tertiary Roads	- Highway 802 to Highway 811
Selected 7000 Series Highways	- Highway 7025 to Highway 7910

### **NOTE:**

Highway 407 ETR is maintained by 407 ETR Concession Company Ltd. For information contact the 407 ETR Traffic Department at (905) 265-4070.

Highway	Location Description From	Location Description To	Dist. (KM)	2016 AADT
QEW	FORT ERIE-GODERICH ST-PEACE BRIDGE PLAZA	CENTRAL AV IC	0.2	14,600
QEW	CENTRAL AV IC	CONCESSION RD IC-1	0.9	18,700
QEW	CONCESSION RD IC-1	THOMPSON RD IC-2	1.0	15,500
QEW	THOMPSON RD IC-2	GILMORE RD IC-5	2.4	17,700
QEW	GILMORE RD IC-5	BOWEN RD IC-7	2.0	24,200
QEW	BOWEN RD IC-7	NETHERBY RD IC-12 NIAGARA FALLS LTS	5.5	25,700
QEW	NETHERBY RD IC-12 NIAGARA FALLS LTS	SODOM RD IC-16	3.2	22,000
QEW	SODOM RD IC-16	LYONS CREEK RD IC-21	6.6	29,000
QEW	LYONS CREEK RD IC-21	MCLEOD RD IC-27	4.4	36,700
QEW	MCLEOD RD IC-27	HWY 420 IC-30	2.9	45,100
QEW	HWY 420 IC-30	THOROLD STONE RD IC-32	2.0	70,400
QEW	THOROLD STONE RD IC-32	MOUNTAIN RD IC-34	2.5	67,400
QEW	MOUNTAIN RD IC-34	HWY 405(WBL)IC-37	2.4	71,000
QEW	HWY 405(WBL)IC-37	GLENDALE AV IC-38	1.3	88,100
QEW	GLENDALE AV IC-38	NIAGARA ST SERVICE RDS	4.8	90,500
QEW	NIAGARA ST SERVICE RDS	NIAGARA ST IC-44	1.2	78,600
QEW	NIAGARA ST IC-44	LAKE ST IC-46	1.6	81,900
QEW	LAKE ST IC-46	ONTARIO ST IC-47	1.3	117,000
QEW	ONTARIO ST IC-47	MARTINDALE RD IC-48	0.7	97,400
QEW	MARTINDALE RD IC-48	HWY 406 IC-49	0.7	74,400
QEW	HWY 406 IC-49	SEVENTH ST IC-51	1.9	97,100
QEW	SEVENTH ST IC-51	JORDAN RD IC-55	4.3	98,100
QEW	JORDAN RD IC-55	VICTORIA AV IC-57	2.8	104,300
QEW	VICTORIA AV IC-57	ONTARIO ST IC-64	6.7	105,100
QEW	ONTARIO ST IC-64	BARTLETT AV IC-68	3.8	99,800
QEW	BARTLETT AV IC-68	MAPLE AV IC-71	2.5	99,300
QEW	MAPLE AV IC-71	CASABLANCA BV IC-74	3.6	107,100
QEW	CASABLANCA BV IC-74	FIFTY RD IC-78	3.5	112,300
QEW	FIFTY RD IC-78	FRUITLAND RD IC-83	5.1	120,300
QEW	FRUITLAND RD IC-83	HAMILTON 20 IC 88-CENTENNIAL PKWY	5.2	119,000
QEW	HAMILTON 20 IC 88-CENTENNIAL PKWY	BURLINGTON ST IC-89	1.6	130,000
QEW	BURLINGTON ST IC-89	EASTPORT RD IC-93 (7189)	4.0	135,000
QEW	EASTPORT RD IC-93 (7189)	HAMILTON HARBOUR ENTRANCE	0.9	149,400
QEW	HAMILTON HARBOUR ENTRANCE	NORTH SHORE BLVD IC 97	2.3	271,300
QEW	NORTH SHORE BLVD IC 97	FAIRVIEW ST IC-99	2.3	161,300
QEW	FAIRVIEW ST IC-99	HWY 403/407 IC-100	1.0	172,900
QEW	HWY 403/407 IC-100	BRANT ST IC 101	0.8	164,300
QEW	BRANT ST IC 101	GUELPH LINE IC-102	1.8	162,100
QEW	GUELPH LINE IC-102	WALKERS LINE IC-105	2.0	195,000
QEW	WALKERS LINE IC-105	APPLEBY LINE IC-107	2.0	190,000
QEW	APPLEBY LINE IC-107	BURLOAK DR IC-109	1.9	195,000
QEW	BURLOAK DR IC-109	BRONTE SERVICE RD IC-110	1.5	204,000
QEW	BRONTE SERVICE RD IC-110	REG. RD 25(N) BRONTE RD(S) IC-111	0.4	202,200
QEW	REG. RD 25(N) BRONTE RD(S) IC-111	THIRD LINE RD IC 113	2.0	191,300

STAMSON 5.0 NORMAL REPORT  
Date: 30-09-2022 09:34:47  
MINISTRY OF ENVIRONMENT AND ENERGY /  
NOISE ASSESSMENT

**Filename: a15.te Time Period:**  
**Day/Night 16/8 hours**  
**Description: Receiver A - 1.5m**  
**Daytime/Nighttime Noise**

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

-----  
Car traffic volume : 43922/21958  
veh/TimePeriod \*  
Medium truck volume : 915/457  
veh/TimePeriod \*  
Heavy truck volume : 915/457  
veh/TimePeriod \*  
Posted speed limit : 100 km/h  
Road gradient : 2 %  
Road pavement : 1 (Typical asphalt or  
concrete)

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

24 hr Traffic Volume (AADT or SADT): 45100  
Percentage of Annual Growth : 2.50  
Number of Years of Growth : 17.00  
Medium Truck % of Total Volume : 2.00  
Heavy Truck % of Total Volume : 2.00  
Day (16 hrs) % of Total Volume : 66.67

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

-----  
Angle1 Angle2 : -90.00 deg 0.00 deg  
Wood depth : 0 (No woods.)  
No of house rows : 0 / 0  
Surface : 1 (Absorptive ground  
surface)  
Receiver source distance : 458.70 / 458.70 m  
Receiver height : 1.50 / 1.50 m  
Topography : 1 (Flat/gentle  
slope; no barrier)  
Reference angle : 0.00

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

-----  
Car traffic volume : 5648/628 veh/TimePeriod  
\*  
Medium truck volume : 82/9 veh/TimePeriod  
\*

Heavy truck volume : 141/16 veh/TimePeriod  
\*  
Posted speed limit : 60 km/h  
Road gradient : 2 %  
Road pavement : 1 (Typical asphalt or  
concrete)

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

24 hr Traffic Volume (AADT or SADT): 4972  
Percentage of Annual Growth : 2.50  
Number of Years of Growth : 11.00  
Medium Truck % of Total Volume : 1.40  
Heavy Truck % of Total Volume : 2.40  
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 2: Montrose Rd (day/night)

-----  
Angle1 Angle2 : -90.00 deg 0.00 deg  
Wood depth : 0 (No woods.)  
No of house rows : 0 / 0  
Surface : 1 (Absorptive ground  
surface)  
Receiver source distance : 88.90 / 88.90 m  
Receiver height : 1.50 / 1.50 m  
Topography : 1 (Flat/gentle  
slope; no barrier)  
Reference angle : 0.00

Results segment # 1: QEW (day)

-----  
Source height = 1.19 m

ROAD (0.00 + 48.53 + 0.00) = 48.53 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

-----  
-90 0 0.66 77.66 0.00 -24.66 -4.47  
0.00 0.00 0.00 48.53  
-----

-----  
Segment Leq : 48.53 dBA

Results segment # 2: Montrose Rd (day)

-----  
Source height = 1.24 m

ROAD (0.00 + 46.86 + 0.00) = 46.86 dBA

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

-----  
-90 0 0.66 64.16 0.00 -12.83 -4.47  
0.00 0.00 0.00 46.86  
-----

Segment Leq : 46.86 dBA

Total Leq All Segments: 50.79 dBA

Results segment # 1: QEW (night)

-----  
Source height = 1.19 m

ROAD (0.00 + 48.53 + 0.00) = 48.53 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

-----  
-90 0 0.66 77.66 0.00 -24.66 -4.47  
0.00 0.00 0.00 48.53  
-----

Segment Leq : 48.53 dBA

Results segment # 2: Montrose Rd (night)

-----  
Source height = 1.25 m

ROAD (0.00 + 40.38 + 0.00) = 40.38 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

-----  
-90 0 0.66 57.67 0.00 -12.83 -4.47  
0.00 0.00 0.00 40.38  
-----

Segment Leq : 40.38 dBA

Total Leq All Segments: 49.15 dBA

TOTAL Leq FROM ALL SOURCES (DAY):  
50.79

(NIGHT): 49.15

STAMSON 5.0 NORMAL REPORT  
Date: 30-09-2022 09:34:51  
MINISTRY OF ENVIRONMENT AND ENERGY /  
NOISE ASSESSMENT

**Filename: a45.te Time Period:**  
**Day/Night 16/8 hours**  
**Description: Receiver A - 4.5m**  
**Daytime/Nighttime Noise**

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

-----  
Car traffic volume : 43922/21958  
veh/TimePeriod \*  
Medium truck volume : 915/457  
veh/TimePeriod \*  
Heavy truck volume : 915/457  
veh/TimePeriod \*  
Posted speed limit : 100 km/h  
Road gradient : 2 %  
Road pavement : 1 (Typical asphalt or  
concrete)

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

24 hr Traffic Volume (AADT or SADT): 45100  
Percentage of Annual Growth : 2.50  
Number of Years of Growth : 17.00  
Medium Truck % of Total Volume : 2.00  
Heavy Truck % of Total Volume : 2.00  
Day (16 hrs) % of Total Volume : 66.67

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

-----  
Angle1 Angle2 : -90.00 deg 0.00 deg  
Wood depth : 0 (No woods.)  
No of house rows : 0 / 0  
Surface : 1 (Absorptive ground  
surface)  
Receiver source distance : 458.70 / 458.70 m  
Receiver height : 4.50 / 4.50 m  
Topography : 1 (Flat/gentle  
slope; no barrier)  
Reference angle : 0.00

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

Car traffic volume : 5648/628 veh/TimePeriod  
 \*  
 Medium truck volume : 82/9 veh/TimePeriod  
 \*  
 Heavy truck volume : 141/16 veh/TimePeriod  
 \*  
 Posted speed limit : 60 km/h  
 Road gradient : 2 %  
 Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 4972  
 Percentage of Annual Growth : 2.50  
 Number of Years of Growth : 11.00  
 Medium Truck % of Total Volume : 1.40  
 Heavy Truck % of Total Volume : 2.40  
 Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 2: Montrose Rd (day/night)

-----  
 Angle1 Angle2 : -90.00 deg 0.00 deg  
 Wood depth : 0 (No woods.)  
 No of house rows : 0 / 0  
 Surface : 1 (Absorptive ground surface)  
 Receiver source distance : 88.90 / 88.90 m  
 Receiver height : 4.50 / 4.50 m  
 Topography : 1 (Flat/gentle slope; no barrier)  
 Reference angle : 0.00

Results segment # 1: QEW (day)

Source height = 1.19 m

ROAD (0.00 + 49.87 + 0.00) = 49.87 dBA  
 Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
 F.Adj W.Adj H.Adj B.Adj SubLeq

-----  
 -90 0 0.58 77.66 0.00 -23.46 -4.33  
 0.00 0.00 0.00 49.87  
 -----

Segment Leq : 49.87 dBA

Results segment # 2: Montrose Rd (day)

Source height = 1.24 m

ROAD (0.00 + 47.64 + 0.00) = 47.64 dBA  
 Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
 F.Adj W.Adj H.Adj B.Adj SubLeq

-----  
 -90 0 0.58 64.16 0.00 -12.19 -4.33  
 0.00 0.00 0.00 47.64  
 -----

Segment Leq : 47.64 dBA

Total Leq All Segments: 51.91 dBA

Results segment # 1: QEW (night)

Source height = 1.19 m

ROAD (0.00 + 49.87 + 0.00) = 49.87 dBA  
 Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
 F.Adj W.Adj H.Adj B.Adj SubLeq

-----  
 -90 0 0.58 77.66 0.00 -23.46 -4.33  
 0.00 0.00 0.00 49.87  
 -----

Segment Leq : 49.87 dBA

Results segment # 2: Montrose Rd (night)

Source height = 1.25 m

ROAD (0.00 + 41.16 + 0.00) = 41.16 dBA  
 Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
 F.Adj W.Adj H.Adj B.Adj SubLeq

-----  
 -90 0 0.58 57.67 0.00 -12.19 -4.33  
 0.00 0.00 0.00 41.16  
 -----

Segment Leq : 41.16 dBA

Total Leq All Segments: 50.42 dBA

TOTAL Leq FROM ALL SOURCES (DAY):  
51.91

(NIGHT): 50.42

STAMSON 5.0 NORMAL REPORT  
Date: 30-09-2022 09:34:54  
MINISTRY OF ENVIRONMENT AND ENERGY /  
NOISE ASSESSMENT

**Filename: a75.te Time Period:**  
**Day/Night 16/8 hours**  
**Description: Receiver A - 7.5m**  
**Daytime/Nighttime Noise**

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

-----  
Car traffic volume : 43922/21958  
veh/TimePeriod \*  
Medium truck volume : 915/457  
veh/TimePeriod \*  
Heavy truck volume : 915/457  
veh/TimePeriod \*  
Posted speed limit : 100 km/h  
Road gradient : 2 %  
Road pavement : 1 (Typical asphalt or  
concrete)

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

24 hr Traffic Volume (AADT or SADT): 45100  
Percentage of Annual Growth : 2.50  
Number of Years of Growth : 17.00  
Medium Truck % of Total Volume : 2.00  
Heavy Truck % of Total Volume : 2.00  
Day (16 hrs) % of Total Volume : 66.67

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

-----  
Angle1 Angle2 : -90.00 deg 0.00 deg  
Wood depth : 0 (No woods.)  
No of house rows : 0 / 0  
Surface : 1 (Absorptive ground  
surface)  
Receiver source distance : 458.70 / 458.70 m  
Receiver height : 7.50 / 7.50 m  
Topography : 1 (Flat/gentle  
slope; no barrier)  
Reference angle : 0.00

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

-----  
Car traffic volume : 5648/628 veh/TimePeriod  
\*  
Medium truck volume : 82/9 veh/TimePeriod  
\*  
Heavy truck volume : 141/16 veh/TimePeriod  
\*  
Posted speed limit : 60 km/h  
Road gradient : 2 %  
Road pavement : 1 (Typical asphalt or  
concrete)

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

24 hr Traffic Volume (AADT or SADT): 4972  
Percentage of Annual Growth : 2.50  
Number of Years of Growth : 11.00  
Medium Truck % of Total Volume : 1.40  
Heavy Truck % of Total Volume : 2.40  
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 2: Montrose Rd (day/night)

-----  
Angle1 Angle2 : -90.00 deg 0.00 deg  
Wood depth : 0 (No woods.)  
No of house rows : 0 / 0  
Surface : 1 (Absorptive ground  
surface)  
Receiver source distance : 88.90 / 88.90 m  
Receiver height : 7.50 / 7.50 m  
Topography : 1 (Flat/gentle  
slope; no barrier)  
Reference angle : 0.00

Results segment # 1: QEW (day)

-----  
Source height = 1.19 m

ROAD (0.00 + 51.37 + 0.00) = 51.37 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

-----  
-90 0 0.49 77.66 0.00 -22.12 -4.17  
0.00 0.00 0.00 51.37  
-----

-----  
Segment Leq : 51.37 dBA



Results segment # 2: Montrose Rd (day)

Source height = 1.24 m

ROAD (0.00 + 48.50 + 0.00) = 48.50 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

-90 0 0.49 64.16 0.00 -11.50 -4.16  
0.00 0.00 0.00 48.50

Segment Leq : 48.50 dBA

Total Leq All Segments: 53.18 dBA

Results segment # 1: QEW (night)

Source height = 1.19 m

ROAD (0.00 + 51.37 + 0.00) = 51.37 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

-90 0 0.49 77.66 0.00 -22.12 -4.17  
0.00 0.00 0.00 51.37

Segment Leq : 51.37 dBA

Results segment # 2: Montrose Rd (night)

Source height = 1.25 m

ROAD (0.00 + 42.02 + 0.00) = 42.02 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

-90 0 0.49 57.67 0.00 -11.50 -4.16  
0.00 0.00 0.00 42.02

Segment Leq : 42.02 dBA

Total Leq All Segments: 51.85 dBA

TOTAL Leq FROM ALL SOURCES (DAY):  
53.18

(NIGHT): 51.85

STAMSON 5.0 NORMAL REPORT  
Date: 30-09-2022 09:34:57  
MINISTRY OF ENVIRONMENT AND ENERGY /  
NOISE ASSESSMENT

Filename: b15.te Time Period:  
Day/Night 16/8 hours  
Description: Receiver B - 1.5m  
Daytime/Nighttime Noise

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

Car traffic volume : 43922/21958  
veh/TimePeriod \*  
Medium truck volume : 915/457  
veh/TimePeriod \*  
Heavy truck volume : 915/457  
veh/TimePeriod \*  
Posted speed limit : 100 km/h  
Road gradient : 2 %  
Road pavement : 1 (Typical asphalt or  
concrete)

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

24 hr Traffic Volume (AADT or SADT): 45100  
Percentage of Annual Growth : 2.50  
Number of Years of Growth : 17.00  
Medium Truck % of Total Volume : 2.00  
Heavy Truck % of Total Volume : 2.00  
Day (16 hrs) % of Total Volume : 66.67

Data for Segment # 1: QEW (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 : 402.40 / 402.40 m  
Receiver height : 1.50 / 1.50 m  
Topography : 1 (Flat/gentle  
slope; no barrier)  
Reference angle : 0.00

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

-----  
Car traffic volume : 5648/628 veh/TimePeriod  
\*  
Medium truck volume : 82/9 veh/TimePeriod  
\*  
Heavy truck volume : 141/16 veh/TimePeriod  
\*  
Posted speed limit : 60 km/h  
Road gradient : 2 %  
Road pavement : 1 (Typical asphalt or  
concrete)

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

24 hr Traffic Volume (AADT or SADT): 4972  
Percentage of Annual Growth : 2.50  
Number of Years of Growth : 11.00  
Medium Truck % of Total Volume : 1.40  
Heavy Truck % of Total Volume : 2.40  
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 2: Montrose Rd (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 : 26.27 / 26.27 m  
Receiver height : 1.50 / 1.50 m  
Topography : 1 (Flat/gentle  
slope; no barrier)  
Reference angle : 0.00

Results segment # 1: QEW (day)

-----  
Source height = 1.19 m

ROAD (0.00 + 52.49 + 0.00) = 52.49 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

-----  
-90 90 0.66 77.66 0.00 -23.71 -1.46  
0.00 0.00 0.00 52.49  
-----

-----  
Segment Leq : 52.49 dBA

Results segment # 2: Montrose Rd (day)

-----  
Source height = 1.24 m

ROAD (0.00 + 58.66 + 0.00) = 58.66 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

-----  
-90 90 0.66 64.16 0.00 -4.04 -1.46  
0.00 0.00 0.00 58.66  
-----

-----  
Segment Leq : 58.66 dBA

Total Leq All Segments: 59.60 dBA

Results segment # 1: QEW (night)

-----  
Source height = 1.19 m

ROAD (0.00 + 52.49 + 0.00) = 52.49 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

-----  
-90 90 0.66 77.66 0.00 -23.71 -1.46  
0.00 0.00 0.00 52.49  
-----

-----  
Segment Leq : 52.49 dBA

Results segment # 2: Montrose Rd (night)

-----  
Source height = 1.25 m

ROAD (0.00 + 52.18 + 0.00) = 52.18 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

-----  
-90 90 0.66 57.67 0.00 -4.04 -1.46  
0.00 0.00 0.00 52.18  
-----

-----  
Segment Leq : 52.18 dBA

Total Leq All Segments: 55.35 dBA

TOTAL Leq FROM ALL SOURCES (DAY):  
59.60  
(NIGHT): 55.35

STAMSON 5.0 NORMAL REPORT  
Date: 30-09-2022 09:35:00  
MINISTRY OF ENVIRONMENT AND ENERGY /  
NOISE ASSESSMENT

**Filename: b45.te Time Period:**  
**Day/Night 16/8 hours**  
**Description: Receiver B - 4.5m**  
**Daytime/Nighttime Noise**

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

-----  
Car traffic volume : 43922/21958  
veh/TimePeriod \*  
Medium truck volume : 915/457  
veh/TimePeriod \*  
Heavy truck volume : 915/457  
veh/TimePeriod \*  
Posted speed limit : 100 km/h  
Road gradient : 2 %  
Road pavement : 1 (Typical asphalt or  
concrete)

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

24 hr Traffic Volume (AADT or SADT): 45100  
Percentage of Annual Growth : 2.50  
Number of Years of Growth : 17.00  
Medium Truck % of Total Volume : 2.00  
Heavy Truck % of Total Volume : 2.00  
Day (16 hrs) % of Total Volume : 66.67

Data for Segment # 1: QEW (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 : 402.40 / 402.40 m  
Receiver height : 4.50 / 4.50 m  
Topography : 1 (Flat/gentle  
slope; no barrier)

Reference angle : 0.00

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

-----  
Car traffic volume : 5648/628 veh/TimePeriod  
\*  
Medium truck volume : 82/9 veh/TimePeriod  
\*  
Heavy truck volume : 141/16 veh/TimePeriod  
\*  
Posted speed limit : 60 km/h  
Road gradient : 2 %  
Road pavement : 1 (Typical asphalt or  
concrete)

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

24 hr Traffic Volume (AADT or SADT): 4972  
Percentage of Annual Growth : 2.50  
Number of Years of Growth : 11.00  
Medium Truck % of Total Volume : 1.40  
Heavy Truck % of Total Volume : 2.40  
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 2: Montrose Rd (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 : 26.27 / 26.27 m  
Receiver height : 4.50 / 4.50 m  
Topography : 1 (Flat/gentle  
slope; no barrier)  
Reference angle : 0.00

Results segment # 1: QEW (day)

-----  
Source height = 1.19 m

ROAD (0.00 + 53.78 + 0.00) = 53.78 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

-----  
-90 90 0.58 77.66 0.00 -22.56 -1.32  
0.00 0.00 0.00 53.78  
-----

Segment Leq : 53.78 dBA

Results segment # 2: Montrose Rd (day)

Source height = 1.24 m

ROAD (0.00 + 59.00 + 0.00) = 59.00 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

-90 90 0.58 64.16 0.00 -3.84 -1.32  
0.00 0.00 0.00 59.00

Segment Leq : 59.00 dBA

Total Leq All Segments: 60.14 dBA

Results segment # 1: QEW (night)

Source height = 1.19 m

ROAD (0.00 + 53.78 + 0.00) = 53.78 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

-90 90 0.58 77.66 0.00 -22.56 -1.32  
0.00 0.00 0.00 53.78

Segment Leq : 53.78 dBA

Results segment # 2: Montrose Rd (night)

Source height = 1.25 m

ROAD (0.00 + 52.52 + 0.00) = 52.52 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

-90 90 0.58 57.67 0.00 -3.84 -1.32  
0.00 0.00 0.00 52.52

Segment Leq : 52.52 dBA

Total Leq All Segments: 56.21 dBA

TOTAL Leq FROM ALL SOURCES (DAY):  
60.14  
(NIGHT): 56.21

STAMSON 5.0 NORMAL REPORT  
Date: 30-09-2022 09:35:03  
MINISTRY OF ENVIRONMENT AND ENERGY /  
NOISE ASSESSMENT

Filename: b75.te Time Period:  
Day/Night 16/8 hours  
Description: Receiver B - 7.5m  
Daytime/Nighttime Noise

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

Car traffic volume : 43922/21958  
veh/TimePeriod \*  
Medium truck volume : 915/457  
veh/TimePeriod \*  
Heavy truck volume : 915/457  
veh/TimePeriod \*  
Posted speed limit : 100 km/h  
Road gradient : 2 %  
Road pavement : 1 (Typical asphalt or  
concrete)

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

24 hr Traffic Volume (AADT or SADT): 45100  
Percentage of Annual Growth : 2.50  
Number of Years of Growth : 17.00  
Medium Truck % of Total Volume : 2.00  
Heavy Truck % of Total Volume : 2.00  
Day (16 hrs) % of Total Volume : 66.67

Data for Segment # 1: QEW (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 : 402.40 / 402.40 m  
Receiver height : 7.50 / 7.50 m

Topography : 1 (Flat/gentle slope; no barrier)  
Reference angle : 0.00

Segment Leq : 55.23 dBA

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

Results segment # 2: Montrose Rd (day)

Car traffic volume : 5648/628 veh/TimePeriod  
\*  
Medium truck volume : 82/9 veh/TimePeriod  
\*  
Heavy truck volume : 141/16 veh/TimePeriod  
\*  
Posted speed limit : 60 km/h  
Road gradient : 2 %  
Road pavement : 1 (Typical asphalt or concrete)

Source height = 1.24 m

ROAD (0.00 + 59.38 + 0.00) = 59.38 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

-90 90 0.49 64.16 0.00 -3.62 -1.15  
0.00 0.00 0.00 59.38

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

24 hr Traffic Volume (AADT or SADT): 4972  
Percentage of Annual Growth : 2.50  
Number of Years of Growth : 11.00  
Medium Truck % of Total Volume : 1.40  
Heavy Truck % of Total Volume : 2.40  
Day (16 hrs) % of Total Volume : 90.00

Segment Leq : 59.38 dBA

Total Leq All Segments: 60.79 dBA

Results segment # 1: QEW (night)

Data for Segment # 2: Montrose Rd (day/night)

Source height = 1.19 m

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 : 26.27 / 26.27 m  
Receiver height : 7.50 / 7.50 m  
Topography : 1 (Flat/gentle slope; no barrier)  
Reference angle : 0.00

ROAD (0.00 + 55.23 + 0.00) = 55.23 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

-90 90 0.49 77.66 0.00 -21.28 -1.15  
0.00 0.00 0.00 55.23

Segment Leq : 55.23 dBA

Results segment # 1: QEW (day)

Results segment # 2: Montrose Rd (night)

Source height = 1.19 m

Source height = 1.25 m

ROAD (0.00 + 55.23 + 0.00) = 55.23 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

ROAD (0.00 + 52.90 + 0.00) = 52.90 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

-90 90 0.49 77.66 0.00 -21.28 -1.15  
0.00 0.00 0.00 55.23

-90 90 0.49 57.67 0.00 -3.62 -1.15  
0.00 0.00 0.00 52.90

-----  
-----  
Segment Leq : 52.90 dBA

Total Leq All Segments: 57.23 dBA

TOTAL Leq FROM ALL SOURCES (DAY):  
60.79

(NIGHT): 57.23

STAMSON 5.0 NORMAL REPORT  
Date: 30-09-2022 10:23:46  
MINISTRY OF ENVIRONMENT AND ENERGY /  
NOISE ASSESSMENT

**Filename: bola.te Time Period:**  
**Day/Night 16/8 hours**  
**Description: Receiver B - 1.5m Daytime OLA**

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

Car traffic volume : 43922/21958  
veh/TimePeriod \*  
Medium truck volume : 915/457  
veh/TimePeriod \*  
Heavy truck volume : 915/457  
veh/TimePeriod \*  
Posted speed limit : 100 km/h  
Road gradient : 2 %  
Road pavement : 1 (Typical asphalt or  
concrete)

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

24 hr Traffic Volume (AADT or SADT): 45100  
Percentage of Annual Growth : 2.50  
Number of Years of Growth : 17.00  
Medium Truck % of Total Volume : 2.00  
Heavy Truck % of Total Volume : 2.00  
Day (16 hrs) % of Total Volume : 66.67

Data for Segment # 1: QEW (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 : 402.40 / 402.40 m

Receiver height : 7.50 / 7.50 m  
Topography : 1 (Flat/gentle  
slope; no barrier)  
Reference angle : 0.00

Road data, segment # 2: Montrose Rd  
(day/night)  
-----

Car traffic volume : 5648/628 veh/TimePeriod  
\*  
Medium truck volume : 82/9 veh/TimePeriod  
\*  
Heavy truck volume : 141/16 veh/TimePeriod  
\*  
Posted speed limit : 60 km/h  
Road gradient : 2 %  
Road pavement : 1 (Typical asphalt or  
concrete)

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

24 hr Traffic Volume (AADT or SADT): 4972  
Percentage of Annual Growth : 2.50  
Number of Years of Growth : 11.00  
Medium Truck % of Total Volume : 1.40  
Heavy Truck % of Total Volume : 2.40  
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 2: Montrose Rd (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 : 23.27 / 26.27 m  
Receiver height : 1.50 / 1.50 m  
Topography : 1 (Flat/gentle  
slope; no barrier)  
Reference angle : 0.00

Results segment # 1: QEW (day)  
-----

Source height = 1.19 m

ROAD (0.00 + 55.23 + 0.00) = 55.23 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq  
-----

-----  
-90 90 0.49 77.66 0.00 -21.28 -1.15  
0.00 0.00 0.00 55.23

-----  
-----  
Segment Leq : 55.23 dBA

Results segment # 2: Montrose Rd (day)  
-----

Source height = 1.24 m

ROAD (0.00 + 59.53 + 0.00) = 59.53 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

-----  
-----  
-90 90 0.66 64.16 0.00 -3.17 -1.46  
0.00 0.00 0.00 59.53  
-----  
-----

Segment Leq : 59.53 dBA

Total Leq All Segments: 60.90 dBA

Results segment # 1: QEW (night)  
-----

Source height = 1.19 m

ROAD (0.00 + 55.23 + 0.00) = 55.23 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

-----  
-----  
-90 90 0.49 77.66 0.00 -21.28 -1.15  
0.00 0.00 0.00 55.23  
-----  
-----

Segment Leq : 55.23 dBA

Results segment # 2: Montrose Rd (night)  
-----

Source height = 1.25 m

ROAD (0.00 + 52.18 + 0.00) = 52.18 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

-----  
-----  
-90 90 0.66 57.67 0.00 -4.04 -1.46  
0.00 0.00 0.00 52.18

-----  
-----  
Segment Leq : 52.18 dBA

Total Leq All Segments: 56.98 dBA

TOTAL Leq FROM ALL SOURCES (DAY):  
60.90  
(NIGHT): 56.98

STAMSON 5.0 NORMAL REPORT  
Date: 30-09-2022 09:35:06  
MINISTRY OF ENVIRONMENT AND ENERGY /  
NOISE ASSESSMENT

**Filename: c15.te Time Period:**  
**Day/Night 16/8 hours**  
**Description: Receiver C - 1.5m**  
**Daytime/Nighttime Noise**

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

Car traffic volume : 43922/21958  
veh/TimePeriod \*  
Medium truck volume : 915/457  
veh/TimePeriod \*  
Heavy truck volume : 915/457  
veh/TimePeriod \*  
Posted speed limit : 100 km/h  
Road gradient : 2 %  
Road pavement : 1 (Typical asphalt or  
concrete)

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

24 hr Traffic Volume (AADT or SADT): 45100  
Percentage of Annual Growth : 2.50  
Number of Years of Growth : 17.00  
Medium Truck % of Total Volume : 2.00  
Heavy Truck % of Total Volume : 2.00  
Day (16 hrs) % of Total Volume : 66.67

Data for Segment # 1: QEW (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 : 364.60 / 364.60 m  
Receiver height : 1.50 / 1.50 m  
Topography : 1 (Flat/gentle slope; no barrier)  
Reference angle : 0.00

-90 90 0.66 77.66 0.00 -23.00 -1.46  
0.00 0.00 0.00 53.20

Segment Leq : 53.20 dBA

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

Results segment # 2: Montrose Rd (day)

Car traffic volume : 5648/628 veh/TimePeriod  
\*  
Medium truck volume : 82/9 veh/TimePeriod  
\*  
Heavy truck volume : 141/16 veh/TimePeriod  
\*  
Posted speed limit : 60 km/h  
Road gradient : 2 %  
Road pavement : 1 (Typical asphalt or concrete)

Source height = 1.24 m

ROAD (0.00 + 59.31 + 0.00) = 59.31 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

-90 90 0.66 64.16 0.00 -3.39 -1.46  
0.00 0.00 0.00 59.31

Segment Leq : 59.31 dBA

Total Leq All Segments: 60.26 dBA

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

24 hr Traffic Volume (AADT or SADT): 4972  
Percentage of Annual Growth : 2.50  
Number of Years of Growth : 11.00  
Medium Truck % of Total Volume : 1.40  
Heavy Truck % of Total Volume : 2.40  
Day (16 hrs) % of Total Volume : 90.00

Results segment # 1: QEW (night)

Data for Segment # 2: Montrose Rd (day/night)

Source height = 1.19 m

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 : 23.99 / 23.99 m  
Receiver height : 1.50 / 1.50 m  
Topography : 1 (Flat/gentle slope; no barrier)  
Reference angle : 0.00

ROAD (0.00 + 53.20 + 0.00) = 53.20 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

-90 90 0.66 77.66 0.00 -23.00 -1.46  
0.00 0.00 0.00 53.20

Segment Leq : 53.20 dBA

Results segment # 1: QEW (day)

Results segment # 2: Montrose Rd (night)

Source height = 1.19 m

Source height = 1.25 m

ROAD (0.00 + 53.20 + 0.00) = 53.20 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

ROAD (0.00 + 52.83 + 0.00) = 52.83 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq



-90 90 0.66 57.67 0.00 -3.39 -1.46  
0.00 0.00 0.00 52.83

Segment Leq : 52.83 dBA

Total Leq All Segments: 56.03 dBA

TOTAL Leq FROM ALL SOURCES (DAY):  
60.26

(NIGHT): 56.03

STAMSON 5.0 NORMAL REPORT

Date: 30-09-2022 09:35:08

MINISTRY OF ENVIRONMENT AND ENERGY /  
NOISE ASSESSMENT

Filename: c45.te Time Period:

Day/Night 16/8 hours

Description: Receiver C - 4.5m

Daytime/Nighttime Noise

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

Car traffic volume : 43922/21958

veh/TimePeriod \*

Medium truck volume : 915/457

veh/TimePeriod \*

Heavy truck volume : 915/457

veh/TimePeriod \*

Posted speed limit : 100 km/h

Road gradient : 2 %

Road pavement : 1 (Typical asphalt or  
concrete)

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

24 hr Traffic Volume (AADT or SADT): 45100

Percentage of Annual Growth : 2.50

Number of Years of Growth : 17.00

Medium Truck % of Total Volume : 2.00

Heavy Truck % of Total Volume : 2.00

Day (16 hrs) % of Total Volume : 66.67

Data for Segment # 1: QEW (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 : 364.60 / 364.60 m

Receiver height : 4.50 / 4.50 m

Topography : 1 (Flat/gentle

slope; no barrier)

Reference angle : 0.00

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

Car traffic volume : 5648/628 veh/TimePeriod

\*

Medium truck volume : 82/9 veh/TimePeriod

\*

Heavy truck volume : 141/16 veh/TimePeriod

\*

Posted speed limit : 60 km/h

Road gradient : 2 %

Road pavement : 1 (Typical asphalt or  
concrete)

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

24 hr Traffic Volume (AADT or SADT): 4972

Percentage of Annual Growth : 2.50

Number of Years of Growth : 11.00

Medium Truck % of Total Volume : 1.40

Heavy Truck % of Total Volume : 2.40

Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 2: Montrose Rd (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 : 23.99 / 23.99 m

Receiver height : 4.50 / 4.50 m

Topography : 1 (Flat/gentle

slope; no barrier)

Reference angle : 0.00

Results segment # 1: QEW (day)

Source height = 1.19 m

ROAD (0.00 + 54.46 + 0.00) = 54.46 dBA

Angle1 Angle2 Alpha RefLeq P.Adj D.Adj

F.Adj W.Adj H.Adj B.Adj SubLeq

-----  
-----  
-90 90 0.58 77.66 0.00 -21.89 -1.32  
0.00 0.00 0.00 54.46  
-----  
-----

Segment Leq : 54.46 dBA

Results segment # 2: Montrose Rd (day)  
-----

Source height = 1.24 m

ROAD (0.00 + 59.62 + 0.00) = 59.62 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq  
-----  
-----

-----  
-----  
-90 90 0.58 64.16 0.00 -3.22 -1.32  
0.00 0.00 0.00 59.62  
-----  
-----

Segment Leq : 59.62 dBA

Total Leq All Segments: 60.78 dBA

Results segment # 1: QEW (night)  
-----

Source height = 1.19 m

ROAD (0.00 + 54.45 + 0.00) = 54.45 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq  
-----  
-----

-----  
-----  
-90 90 0.58 77.66 0.00 -21.89 -1.32  
0.00 0.00 0.00 54.45  
-----  
-----

Segment Leq : 54.45 dBA

Results segment # 2: Montrose Rd (night)  
-----

Source height = 1.25 m

ROAD (0.00 + 53.14 + 0.00) = 53.14 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

-----  
-----  
-90 90 0.58 57.67 0.00 -3.22 -1.32  
0.00 0.00 0.00 53.14  
-----  
-----

Segment Leq : 53.14 dBA

Total Leq All Segments: 56.85 dBA

TOTAL Leq FROM ALL SOURCES (DAY):  
60.78  
(NIGHT): 56.85

STAMSON 5.0 NORMAL REPORT  
Date: 30-09-2022 10:22:08  
MINISTRY OF ENVIRONMENT AND ENERGY /  
NOISE ASSESSMENT

**Filename: c75.te Time Period:**  
**Day/Night 16/8 hours**  
**Description: Receiver C - 7.5m**  
**Daytime/Nighttime Noise**

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

Car traffic volume : 43922/21958  
veh/TimePeriod \*  
Medium truck volume : 915/457  
veh/TimePeriod \*  
Heavy truck volume : 915/457  
veh/TimePeriod \*  
Posted speed limit : 100 km/h  
Road gradient : 2 %  
Road pavement : 1 (Typical asphalt or  
concrete)

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

24 hr Traffic Volume (AADT or SADT): 45100  
Percentage of Annual Growth : 2.50  
Number of Years of Growth : 17.00  
Medium Truck % of Total Volume : 2.00  
Heavy Truck % of Total Volume : 2.00  
Day (16 hrs) % of Total Volume : 66.67

Data for Segment # 1: QEW (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 : 364.60 / 364.60 m  
 Receiver height : 7.50 / 7.50 m  
 Topography : 1 (Flat/gentle slope; no barrier)  
 Reference angle : 0.00

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj
F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
-90	90	0.49	77.66	0.00	-20.64 -1.15
0.00	0.00	0.00	55.87		

Segment Leq : 55.87 dBA

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

Results segment # 2: Montrose Rd (day)

Car traffic volume : 5648/628 veh/TimePeriod  
 \*  
 Medium truck volume : 82/9 veh/TimePeriod  
 \*  
 Heavy truck volume : 141/16 veh/TimePeriod  
 \*  
 Posted speed limit : 60 km/h  
 Road gradient : 2 %  
 Road pavement : 1 (Typical asphalt or concrete)

Source height = 1.24 m

ROAD (0.00 + 59.97 + 0.00) = 59.97 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj
F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
-90	90	0.49	64.16	0.00	-3.03 -1.15
0.00	0.00	0.00	59.97		

Segment Leq : 59.97 dBA

Total Leq All Segments: 61.40 dBA

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

24 hr Traffic Volume (AADT or SADT): 4972  
 Percentage of Annual Growth : 2.50  
 Number of Years of Growth : 11.00  
 Medium Truck % of Total Volume : 1.40  
 Heavy Truck % of Total Volume : 2.40  
 Day (16 hrs) % of Total Volume : 90.00

Results segment # 1: QEW (night)

Data for Segment # 2: Montrose Rd (day/night)

Source height = 1.19 m

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 : 23.99 / 23.99 m  
 Receiver height : 7.50 / 7.50 m  
 Topography : 1 (Flat/gentle slope; no barrier)  
 Reference angle : 0.00

ROAD (0.00 + 55.86 + 0.00) = 55.86 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj
F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
-90	90	0.49	77.66	0.00	-20.64 -1.15
0.00	0.00	0.00	55.86		

Segment Leq : 55.86 dBA

Results segment # 1: QEW (day)

Results segment # 2: Montrose Rd (night)

Source height = 1.19 m

ROAD (0.00 + 55.87 + 0.00) = 55.87 dBA

Source height = 1.25 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 0.49 57.67 0.00 -3.03 -1.15  
0.00 0.00 0.00 53.49  
-----  
-----

Segment Leq : 53.49 dBA

Total Leq All Segments: 57.85 dBA

TOTAL Leq FROM ALL SOURCES (DAY):  
61.40

(NIGHT): 57.85

STAMSON 5.0 NORMAL REPORT  
Date: 30-09-2022 10:23:51  
MINISTRY OF ENVIRONMENT AND ENERGY /  
NOISE ASSESSMENT

**Filename: cola.te Time Period:**  
**Day/Night 16/8 hours**  
**Description: Receiver C - 1.5m Daytime OLA**

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

-----  
Car traffic volume : 43922/21958  
veh/TimePeriod \*  
Medium truck volume : 915/457  
veh/TimePeriod \*  
Heavy truck volume : 915/457  
veh/TimePeriod \*  
Posted speed limit : 100 km/h  
Road gradient : 2 %  
Road pavement : 1 (Typical asphalt or  
concrete)

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

24 hr Traffic Volume (AADT or SADT): 45100  
Percentage of Annual Growth : 2.50  
Number of Years of Growth : 17.00  
Medium Truck % of Total Volume : 2.00  
Heavy Truck % of Total Volume : 2.00  
Day (16 hrs) % of Total Volume : 66.67

Data for Segment # 1: QEW (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 : 361.60 / 361.60 m  
Receiver height : 1.50 / 1.50 m  
Topography : 1 (Flat/gentle  
slope; no barrier)  
Reference angle : 0.00

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

-----  
Car traffic volume : 5648/628 veh/TimePeriod  
\*  
Medium truck volume : 82/9 veh/TimePeriod  
\*  
Heavy truck volume : 141/16 veh/TimePeriod  
\*  
Posted speed limit : 60 km/h  
Road gradient : 2 %  
Road pavement : 1 (Typical asphalt or  
concrete)

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

24 hr Traffic Volume (AADT or SADT): 4972  
Percentage of Annual Growth : 2.50  
Number of Years of Growth : 11.00  
Medium Truck % of Total Volume : 1.40  
Heavy Truck % of Total Volume : 2.40  
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 2: Montrose Rd (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 : 20.99 / 20.99 m  
Receiver height : 1.50 / 1.50 m  
Topography : 1 (Flat/gentle  
slope; no barrier)  
Reference angle : 0.00

Results segment # 1: QEW (day)

-----  
Source height = 1.19 m

ROAD (0.00 + 53.26 + 0.00) = 53.26 dBA

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

-----  
-----  
-90 90 0.66 77.66 0.00 -22.94 -1.46  
0.00 0.00 0.00 53.26  
-----  
-----

Segment Leq : 53.26 dBA

Results segment # 2: Montrose Rd (day)

Source height = 1.24 m

ROAD (0.00 + 60.28 + 0.00) = 60.28 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

-----  
-----  
-90 90 0.66 64.16 0.00 -2.42 -1.46  
0.00 0.00 0.00 60.28  
-----  
-----

Segment Leq : 60.28 dBA

Total Leq All Segments: 61.07 dBA

Results segment # 1: QEW (night)

Source height = 1.19 m

ROAD (0.00 + 53.26 + 0.00) = 53.26 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

-----  
-----  
-90 90 0.66 77.66 0.00 -22.94 -1.46  
0.00 0.00 0.00 53.26  
-----  
-----

Segment Leq : 53.26 dBA

Results segment # 2: Montrose Rd (night)

Source height = 1.25 m

ROAD (0.00 + 53.79 + 0.00) = 53.79 dBA

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

-----  
-----  
-90 90 0.66 57.67 0.00 -2.42 -1.46  
0.00 0.00 0.00 53.79  
-----  
-----

Segment Leq : 53.79 dBA

Total Leq All Segments: 56.54 dBA

TOTAL Leq FROM ALL SOURCES (DAY):  
61.07

(NIGHT): 56.54

STAMSON 5.0 NORMAL REPORT  
Date: 30-09-2022 10:23:11  
MINISTRY OF ENVIRONMENT AND ENERGY /  
NOISE ASSESSMENT

**Filename: d15.te Time Period:**  
**Day/Night 16/8 hours**  
**Description: Receiver D - 1.5m**  
**Daytime/Nighttime Noise**

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

-----  
Car traffic volume : 43922/21958  
veh/TimePeriod \*  
Medium truck volume : 915/457  
veh/TimePeriod \*  
Heavy truck volume : 915/457  
veh/TimePeriod \*  
Posted speed limit : 100 km/h  
Road gradient : 2 %  
Road pavement : 1 (Typical asphalt or  
concrete)

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

24 hr Traffic Volume (AADT or SADT): 45100  
Percentage of Annual Growth : 2.50  
Number of Years of Growth : 17.00  
Medium Truck % of Total Volume : 2.00  
Heavy Truck % of Total Volume : 2.00  
Day (16 hrs) % of Total Volume : 66.67

Data for Segment # 1: QEW (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 : 315.70 / 315.70 m  
 Receiver height : 1.50 / 1.50 m  
 Topography : 1 (Flat/gentle slope; no barrier)  
 Reference angle : 0.00

ROAD (0.00 + 54.24 + 0.00) = 54.24 dBA  
 Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
 F.Adj W.Adj H.Adj B.Adj SubLeq

-----  
 -90 90 0.66 77.66 0.00 -21.96 -1.46  
 0.00 0.00 0.00 54.24  
 -----

Segment Leq : 54.24 dBA

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

Results segment # 2: Montrose Rd (day)

-----  
 Car traffic volume : 5648/628 veh/TimePeriod  
 \*  
 Medium truck volume : 82/9 veh/TimePeriod  
 \*  
 Heavy truck volume : 141/16 veh/TimePeriod  
 \*  
 Posted speed limit : 60 km/h  
 Road gradient : 2 %  
 Road pavement : 1 (Typical asphalt or concrete)

Source height = 1.24 m

ROAD (0.00 + 60.34 + 0.00) = 60.34 dBA  
 Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
 F.Adj W.Adj H.Adj B.Adj SubLeq

-----  
 -90 90 0.66 64.16 0.00 -2.36 -1.46  
 0.00 0.00 0.00 60.34  
 -----

Segment Leq : 60.34 dBA

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

24 hr Traffic Volume (AADT or SADT): 4972  
 Percentage of Annual Growth : 2.50  
 Number of Years of Growth : 11.00  
 Medium Truck % of Total Volume : 1.40  
 Heavy Truck % of Total Volume : 2.40  
 Day (16 hrs) % of Total Volume : 90.00

Total Leq All Segments: 61.29 dBA

Results segment # 1: QEW (night)

Data for Segment # 2: Montrose Rd (day/night)

Source height = 1.19 m

-----  
 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 : 20.80 / 20.80 m  
 Receiver height : 1.50 / 1.50 m  
 Topography : 1 (Flat/gentle slope; no barrier)  
 Reference angle : 0.00

ROAD (0.00 + 54.24 + 0.00) = 54.24 dBA  
 Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
 F.Adj W.Adj H.Adj B.Adj SubLeq

-----  
 -90 90 0.66 77.66 0.00 -21.96 -1.46  
 0.00 0.00 0.00 54.24  
 -----

Segment Leq : 54.24 dBA

Results segment # 1: QEW (day)

Results segment # 2: Montrose Rd (night)

Source height = 1.19 m

Source height = 1.25 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 0.66 57.67 0.00 -2.36 -1.46  
0.00 0.00 0.00 53.86  
-----

Segment Leq : 53.86 dBA

Total Leq All Segments: 57.06 dBA

TOTAL Leq FROM ALL SOURCES (DAY):  
61.29

(NIGHT): 57.06

STAMSON 5.0 NORMAL REPORT  
Date: 30-09-2022 10:23:19  
MINISTRY OF ENVIRONMENT AND ENERGY /  
NOISE ASSESSMENT

**Filename: d45.te Time Period:**  
**Day/Night 16/8 hours**  
**Description: Receiver D - 4.5m**  
**Daytime/Nighttime Noise**

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

-----  
Car traffic volume : 43922/21958  
veh/TimePeriod \*  
Medium truck volume : 915/457  
veh/TimePeriod \*  
Heavy truck volume : 915/457  
veh/TimePeriod \*  
Posted speed limit : 100 km/h  
Road gradient : 2 %  
Road pavement : 1 (Typical asphalt or  
concrete)

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

24 hr Traffic Volume (AADT or SADT): 45100  
Percentage of Annual Growth : 2.50  
Number of Years of Growth : 17.00  
Medium Truck % of Total Volume : 2.00  
Heavy Truck % of Total Volume : 2.00  
Day (16 hrs) % of Total Volume : 66.67

Data for Segment # 1: QEW (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 : 315.70 / 315.70 m  
Receiver height : 4.50 / 4.50 m  
Topography : 1 (Flat/gentle  
slope; no barrier)  
Reference angle : 0.00

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

-----  
Car traffic volume : 5648/628 veh/TimePeriod  
\*  
Medium truck volume : 82/9 veh/TimePeriod  
\*  
Heavy truck volume : 141/16 veh/TimePeriod  
\*  
Posted speed limit : 60 km/h  
Road gradient : 2 %  
Road pavement : 1 (Typical asphalt or  
concrete)

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

24 hr Traffic Volume (AADT or SADT): 4972  
Percentage of Annual Growth : 2.50  
Number of Years of Growth : 11.00  
Medium Truck % of Total Volume : 1.40  
Heavy Truck % of Total Volume : 2.40  
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 2: Montrose Rd (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 : 20.80 / 20.80 m  
Receiver height : 4.50 / 4.50 m  
Topography : 1 (Flat/gentle  
slope; no barrier)  
Reference angle : 0.00

Results segment # 1: QEW (day)

-----  
Source height = 1.19 m

ROAD (0.00 + 55.44 + 0.00) = 55.44 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

-----  
-----  
-90 90 0.58 77.66 0.00 -20.90 -1.32  
0.00 0.00 0.00 55.44  
-----  
-----

Segment Leq : 55.44 dBA

Results segment # 2: Montrose Rd (day)

Source height = 1.24 m

ROAD (0.00 + 60.60 + 0.00) = 60.60 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

-----  
-----  
-90 90 0.58 64.16 0.00 -2.24 -1.32  
0.00 0.00 0.00 60.60  
-----  
-----

Segment Leq : 60.60 dBA

Total Leq All Segments: 61.76 dBA

Results segment # 1: QEW (night)

Source height = 1.19 m

ROAD (0.00 + 55.44 + 0.00) = 55.44 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

-----  
-----  
-90 90 0.58 77.66 0.00 -20.90 -1.32  
0.00 0.00 0.00 55.44  
-----  
-----

Segment Leq : 55.44 dBA

Results segment # 2: Montrose Rd (night)

Source height = 1.25 m

ROAD (0.00 + 54.12 + 0.00) = 54.12 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

-----  
-----  
-90 90 0.58 57.67 0.00 -2.24 -1.32  
0.00 0.00 0.00 54.12  
-----  
-----

Segment Leq : 54.12 dBA

Total Leq All Segments: 57.84 dBA

TOTAL Leq FROM ALL SOURCES (DAY):  
61.76

(NIGHT): 57.84

STAMSON 5.0 NORMAL REPORT  
Date: 30-09-2022 10:23:27  
MINISTRY OF ENVIRONMENT AND ENERGY /  
NOISE ASSESSMENT

**Filename: d75.te Time Period:**  
**Day/Night 16/8 hours**  
**Description: Receiver D - 7.5m**  
**Daytime/Nighttime Noise**

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

-----  
Car traffic volume : 43922/21958  
veh/TimePeriod \*  
Medium truck volume : 915/457  
veh/TimePeriod \*  
Heavy truck volume : 915/457  
veh/TimePeriod \*  
Posted speed limit : 100 km/h  
Road gradient : 2 %  
Road pavement : 1 (Typical asphalt or  
concrete)

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

24 hr Traffic Volume (AADT or SADT): 45100  
Percentage of Annual Growth : 2.50  
Number of Years of Growth : 17.00  
Medium Truck % of Total Volume : 2.00  
Heavy Truck % of Total Volume : 2.00  
Day (16 hrs) % of Total Volume : 66.67



Data for Segment # 1: QEW (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 : 315.70 / 315.70 m
Receiver height : 7.50 / 7.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Source height = 1.19 m

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

-90 90 0.49 77.66 0.00 -19.71 -1.15
0.00 0.00 0.00 56.80

Segment Leq : 56.80 dBA

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

Car traffic volume : 5648/628 veh/TimePeriod
\*
Medium truck volume : 82/9 veh/TimePeriod
\*
Heavy truck volume : 141/16 veh/TimePeriod
\*
Posted speed limit : 60 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

Results segment # 2: Montrose Rd (day)

Source height = 1.24 m

ROAD (0.00 + 60.89 + 0.00) = 60.89 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj
F.Adj W.Adj H.Adj B.Adj SubLeq

-90 90 0.49 64.16 0.00 -2.11 -1.15
0.00 0.00 0.00 60.89

Segment Leq : 60.89 dBA

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

24 hr Traffic Volume (AADT or SADT): 4972
Percentage of Annual Growth : 2.50
Number of Years of Growth : 11.00
Medium Truck % of Total Volume : 1.40
Heavy Truck % of Total Volume : 2.40
Day (16 hrs) % of Total Volume : 90.00

Total Leq All Segments: 62.32 dBA

Results segment # 1: QEW (night)

Source height = 1.19 m

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

-90 90 0.49 77.66 0.00 -19.71 -1.15
0.00 0.00 0.00 56.80

Segment Leq : 56.80 dBA

Data for Segment # 2: Montrose Rd (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 : 20.80 / 20.80 m
Receiver height : 7.50 / 7.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 2: Montrose Rd (night)

Results segment # 1: QEW (day)

Source height = 1.25 m

ROAD (0.00 + 54.41 + 0.00) = 54.41 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

-----  
-90 90 0.49 57.67 0.00 -2.11 -1.15  
0.00 0.00 0.00 54.41  
-----

Segment Leq : 54.41 dBA

Total Leq All Segments: 58.78 dBA

TOTAL Leq FROM ALL SOURCES (DAY):  
62.32

(NIGHT): 58.78

STAMSON 5.0 NORMAL REPORT  
Date: 30-09-2022 10:23:55  
MINISTRY OF ENVIRONMENT AND ENERGY /  
NOISE ASSESSMENT

**Filename: dola.te Time Period:**  
**Day/Night 16/8 hours**  
**Description: Receiver D - 1.5m Daytime OLA**

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

-----  
Car traffic volume : 43922/21958  
veh/TimePeriod \*  
Medium truck volume : 915/457  
veh/TimePeriod \*  
Heavy truck volume : 915/457  
veh/TimePeriod \*  
Posted speed limit : 100 km/h  
Road gradient : 2 %  
Road pavement : 1 (Typical asphalt or  
concrete)

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

24 hr Traffic Volume (AADT or SADT): 45100  
Percentage of Annual Growth : 2.50  
Number of Years of Growth : 17.00  
Medium Truck % of Total Volume : 2.00  
Heavy Truck % of Total Volume : 2.00  
Day (16 hrs) % of Total Volume : 66.67

Data for Segment # 1: QEW (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 : 312.70 / 312.70 m  
Receiver height : 1.50 / 1.50 m  
Topography : 1 (Flat/gentle  
slope; no barrier)  
Reference angle : 0.00

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

-----  
Car traffic volume : 5648/628 veh/TimePeriod  
\*  
Medium truck volume : 82/9 veh/TimePeriod  
\*  
Heavy truck volume : 141/16 veh/TimePeriod  
\*  
Posted speed limit : 60 km/h  
Road gradient : 2 %  
Road pavement : 1 (Typical asphalt or  
concrete)

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

24 hr Traffic Volume (AADT or SADT): 4972  
Percentage of Annual Growth : 2.50  
Number of Years of Growth : 11.00  
Medium Truck % of Total Volume : 1.40  
Heavy Truck % of Total Volume : 2.40  
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 2: Montrose Rd (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 : 17.80 / 17.80 m  
Receiver height : 1.50 / 1.50 m  
Topography : 1 (Flat/gentle  
slope; no barrier)  
Reference angle : 0.00

Results segment # 1: QEW (day)

-----

Source height = 1.19 m

ROAD (0.00 + 54.31 + 0.00) = 54.31 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

-----  
-----  
-90 90 0.66 77.66 0.00 -21.90 -1.46  
0.00 0.00 0.00 54.31  
-----  
-----

Segment Leq : 54.31 dBA

Results segment # 2: Montrose Rd (day)

Source height = 1.24 m

ROAD (0.00 + 61.47 + 0.00) = 61.47 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

-----  
-----  
-90 90 0.66 64.16 0.00 -1.23 -1.46  
0.00 0.00 0.00 61.47  
-----  
-----

Segment Leq : 61.47 dBA

Total Leq All Segments: 62.23 dBA

Results segment # 1: QEW (night)

Source height = 1.19 m

ROAD (0.00 + 54.30 + 0.00) = 54.30 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

-----  
-----  
-90 90 0.66 77.66 0.00 -21.90 -1.46  
0.00 0.00 0.00 54.30  
-----  
-----

Segment Leq : 54.30 dBA

Results segment # 2: Montrose Rd (night)

Source height = 1.25 m

ROAD (0.00 + 54.98 + 0.00) = 54.98 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

-----  
-----  
-90 90 0.66 57.67 0.00 -1.23 -1.46  
0.00 0.00 0.00 54.98  
-----  
-----

Segment Leq : 54.98 dBA

Total Leq All Segments: 57.66 dBA

TOTAL Leq FROM ALL SOURCES (DAY):  
62.23  
(NIGHT): 57.66

STAMSON 5.0 NORMAL REPORT  
Date: 30-09-2022 10:22:30  
MINISTRY OF ENVIRONMENT AND ENERGY /  
NOISE ASSESSMENT

**Filename: e15.te Time Period:**  
**Day/Night 16/8 hours**  
**Description: Receiver E - 1.5m**  
**Daytime/Nighttime Noise**

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

-----  
Car traffic volume : 43922/21958  
veh/TimePeriod \*  
Medium truck volume : 915/457  
veh/TimePeriod \*  
Heavy truck volume : 915/457  
veh/TimePeriod \*  
Posted speed limit : 100 km/h  
Road gradient : 2 %  
Road pavement : 1 (Typical asphalt or  
concrete)

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

24 hr Traffic Volume (AADT or SADT): 45100  
Percentage of Annual Growth : 2.50  
Number of Years of Growth : 17.00  
Medium Truck % of Total Volume : 2.00  
Heavy Truck % of Total Volume : 2.00

Day (16 hrs) % of Total Volume : 66.67

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

Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 341.50 / 341.50 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Source height = 1.19 m

ROAD (0.00 + 50.66 + 0.00) = 50.66 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj
F.Adj W.Adj H.Adj B.Adj SubLeq

-90 0 0.66 77.66 0.00 -22.53 -4.47
0.00 0.00 0.00 50.66

Segment Leq : 50.66 dBA

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

Car traffic volume : 5648/628 veh/TimePeriod
\*
Medium truck volume : 82/9 veh/TimePeriod
\*
Heavy truck volume : 141/16 veh/TimePeriod
\*
Posted speed limit : 60 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

Results segment # 2: Montrose Rd (day)

Source height = 1.24 m

ROAD (0.00 + 50.87 + 0.00) = 50.87 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj
F.Adj W.Adj H.Adj B.Adj SubLeq

-90 0 0.66 64.16 0.00 -8.82 -4.47 0.00
0.00 0.00 50.87

Segment Leq : 50.87 dBA

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

24 hr Traffic Volume (AADT or SADT): 4972
Percentage of Annual Growth : 2.50
Number of Years of Growth : 11.00
Medium Truck % of Total Volume : 1.40
Heavy Truck % of Total Volume : 2.40
Day (16 hrs) % of Total Volume : 90.00

Total Leq All Segments: 53.78 dBA

Data for Segment # 2: Montrose Rd (day/night)

Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 51.00 / 51.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: QEW (night)

Source height = 1.19 m

ROAD (0.00 + 50.66 + 0.00) = 50.66 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj
F.Adj W.Adj H.Adj B.Adj SubLeq

-90 0 0.66 77.66 0.00 -22.53 -4.47
0.00 0.00 0.00 50.66

Segment Leq : 50.66 dBA

Results segment # 1: QEW (day)

Results segment # 2: Montrose Rd (night)

Source height = 1.25 m

ROAD (0.00 + 44.38 + 0.00) = 44.38 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

-----  
-90 0 0.66 57.67 0.00 -8.82 -4.47 0.00  
0.00 0.00 44.38  
-----

Segment Leq : 44.38 dBA

Total Leq All Segments: 51.58 dBA

TOTAL Leq FROM ALL SOURCES (DAY):  
53.78

(NIGHT): 51.58

STAMSON 5.0 NORMAL REPORT  
Date: 30-09-2022 10:22:33  
MINISTRY OF ENVIRONMENT AND ENERGY /  
NOISE ASSESSMENT

**Filename: e45.te Time Period:**  
**Day/Night 16/8 hours**  
**Description: Receiver E - 4.5m**  
**Daytime/Nighttime Noise**

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

-----  
Car traffic volume : 43922/21958  
veh/TimePeriod \*  
Medium truck volume : 915/457  
veh/TimePeriod \*  
Heavy truck volume : 915/457  
veh/TimePeriod \*  
Posted speed limit : 100 km/h  
Road gradient : 2 %  
Road pavement : 1 (Typical asphalt or  
concrete)

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

24 hr Traffic Volume (AADT or SADT): 45100  
Percentage of Annual Growth : 2.50  
Number of Years of Growth : 17.00  
Medium Truck % of Total Volume : 2.00

Heavy Truck % of Total Volume : 2.00  
Day (16 hrs) % of Total Volume : 66.67

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

-----  
Angle1 Angle2 : -90.00 deg 0.00 deg  
Wood depth : 0 (No woods.)  
No of house rows : 0 / 0  
Surface : 1 (Absorptive ground  
surface)  
Receiver source distance : 341.50 / 341.50 m  
Receiver height : 4.50 / 4.50 m  
Topography : 1 (Flat/gentle  
slope; no barrier)  
Reference angle : 0.00

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

-----  
Car traffic volume : 5648/628 veh/TimePeriod  
\*  
Medium truck volume : 82/9 veh/TimePeriod  
\*  
Heavy truck volume : 141/16 veh/TimePeriod  
\*  
Posted speed limit : 60 km/h  
Road gradient : 2 %  
Road pavement : 1 (Typical asphalt or  
concrete)

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

24 hr Traffic Volume (AADT or SADT): 4972  
Percentage of Annual Growth : 2.50  
Number of Years of Growth : 11.00  
Medium Truck % of Total Volume : 1.40  
Heavy Truck % of Total Volume : 2.40  
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 2: Montrose Rd (day/night)

-----  
Angle1 Angle2 : -90.00 deg 0.00 deg  
Wood depth : 0 (No woods.)  
No of house rows : 0 / 0  
Surface : 1 (Absorptive ground  
surface)  
Receiver source distance : 51.00 / 51.00 m  
Receiver height : 4.50 / 4.50 m  
Topography : 1 (Flat/gentle  
slope; no barrier)  
Reference angle : 0.00

Results segment # 1: QEW (day)

-----  
Source height = 1.19 m

ROAD (0.00 + 51.89 + 0.00) = 51.89 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

-----  
-90 0 0.58 77.66 0.00 -21.44 -4.33  
0.00 0.00 0.00 51.89  
-----

-----  
Segment Leq : 51.89 dBA

Results segment # 2: Montrose Rd (day)

-----  
Source height = 1.24 m

ROAD (0.00 + 51.45 + 0.00) = 51.45 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

-----  
-90 0 0.58 64.16 0.00 -8.38 -4.33 0.00  
0.00 0.00 51.45  
-----

-----  
Segment Leq : 51.45 dBA

Total Leq All Segments: 54.69 dBA

Results segment # 1: QEW (night)

-----  
Source height = 1.19 m

ROAD (0.00 + 51.89 + 0.00) = 51.89 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

-----  
-90 0 0.58 77.66 0.00 -21.44 -4.33  
0.00 0.00 0.00 51.89  
-----

-----  
Segment Leq : 51.89 dBA

Results segment # 2: Montrose Rd (night)

-----  
Source height = 1.25 m

ROAD (0.00 + 44.96 + 0.00) = 44.96 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

-----  
-90 0 0.58 57.67 0.00 -8.38 -4.33 0.00  
0.00 0.00 44.96  
-----

-----  
Segment Leq : 44.96 dBA

Total Leq All Segments: 52.69 dBA

TOTAL Leq FROM ALL SOURCES (DAY):  
54.69  
(NIGHT): 52.69

STAMSON 5.0 NORMAL REPORT  
Date: 30-09-2022 10:22:37  
MINISTRY OF ENVIRONMENT AND ENERGY /  
NOISE ASSESSMENT

**Filename: e75.te Time Period:**  
**Day/Night 16/8 hours**  
**Description: Receiver E - 7.5m**  
**Daytime/Nighttime Noise**

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

-----  
Car traffic volume : 43922/21958  
veh/TimePeriod \*  
Medium truck volume : 915/457  
veh/TimePeriod \*  
Heavy truck volume : 915/457  
veh/TimePeriod \*  
Posted speed limit : 100 km/h  
Road gradient : 2 %  
Road pavement : 1 (Typical asphalt or  
concrete)

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

24 hr Traffic Volume (AADT or SADT): 45100  
Percentage of Annual Growth : 2.50

Number of Years of Growth : 17.00  
Medium Truck % of Total Volume : 2.00  
Heavy Truck % of Total Volume : 2.00  
Day (16 hrs) % of Total Volume : 66.67

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

-----  
Angle1 Angle2 : -90.00 deg 0.00 deg  
Wood depth : 0 (No woods.)  
No of house rows : 0 / 0  
Surface : 1 (Absorptive ground surface)  
Receiver source distance : 341.50 / 341.50 m  
Receiver height : 7.50 / 7.50 m  
Topography : 1 (Flat/gentle slope; no barrier)  
Reference angle : 0.00

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

-----  
Car traffic volume : 5648/628 veh/TimePeriod  
\*  
Medium truck volume : 82/9 veh/TimePeriod  
\*  
Heavy truck volume : 141/16 veh/TimePeriod  
\*  
Posted speed limit : 60 km/h  
Road gradient : 2 %  
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 4972  
Percentage of Annual Growth : 2.50  
Number of Years of Growth : 11.00  
Medium Truck % of Total Volume : 1.40  
Heavy Truck % of Total Volume : 2.40  
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 2: Montrose Rd (day/night)

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

Results segment # 1: QEW (day)

-----  
Source height = 1.19 m

ROAD (0.00 + 53.28 + 0.00) = 53.28 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

-----  
-90 0 0.49 77.66 0.00 -20.21 -4.17  
0.00 0.00 0.00 53.28  
-----

-----  
Segment Leq : 53.28 dBA

Results segment # 2: Montrose Rd (day)

-----  
Source height = 1.24 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 0 0.49 64.16 0.00 -7.91 -4.16 0.00  
0.00 0.00 52.09  
-----

-----  
Segment Leq : 52.09 dBA

Total Leq All Segments: 55.74 dBA

Results segment # 1: QEW (night)

-----  
Source height = 1.19 m

ROAD (0.00 + 53.28 + 0.00) = 53.28 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

-----  
-90 0 0.49 77.66 0.00 -20.21 -4.17  
0.00 0.00 0.00 53.28  
-----

-----  
Segment Leq : 53.28 dBA

Results segment # 2: Montrose Rd (night)

Source height = 1.25 m

ROAD (0.00 + 45.61 + 0.00) = 45.61 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

-90 0 0.49 57.67 0.00 -7.91 -4.16 0.00  
0.00 0.00 45.61

Segment Leq : 45.61 dBA

Total Leq All Segments: 53.97 dBA

TOTAL Leq FROM ALL SOURCES (DAY):  
55.74

(NIGHT): 53.97

STAMSON 5.0 NORMAL REPORT  
Date: 30-09-2022 09:35:35  
MINISTRY OF ENVIRONMENT AND ENERGY /  
NOISE ASSESSMENT

Filename: b15f.te Time Period:  
Day/Night 16/8 hours  
Description: Receiver B - 1.5m  
Daytime/Nighttime 1.8m Fence

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

Car traffic volume : 43922/21958  
veh/TimePeriod \*  
Medium truck volume : 915/457  
veh/TimePeriod \*  
Heavy truck volume : 915/457  
veh/TimePeriod \*  
Posted speed limit : 100 km/h  
Road gradient : 2 %  
Road pavement : 1 (Typical asphalt or  
concrete)

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

24 hr Traffic Volume (AADT or SADT): 45100  
Percentage of Annual Growth : 2.50  
Number of Years of Growth : 17.00  
Medium Truck % of Total Volume : 2.00  
Heavy Truck % of Total Volume : 2.00  
Day (16 hrs) % of Total Volume : 66.67

Data for Segment # 1: QEW (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 : 402.40 / 402.40 m  
Receiver height : 1.50 / 1.50 m  
Topography : 2 (Flat/gentle  
slope; with barrier)  
Barrier angle1 : -90.00 deg Angle2 :  
90.00 deg  
Barrier height : 1.80 m  
Barrier receiver distance : 8.00 / 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 # 2: Montrose Rd  
(day/night)

Car traffic volume : 5648/628 veh/TimePeriod  
\*  
Medium truck volume : 82/9 veh/TimePeriod  
\*  
Heavy truck volume : 141/16 veh/TimePeriod  
\*  
Posted speed limit : 60 km/h  
Road gradient : 2 %  
Road pavement : 1 (Typical asphalt or  
concrete)

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

24 hr Traffic Volume (AADT or SADT): 4972  
Percentage of Annual Growth : 2.50  
Number of Years of Growth : 11.00  
Medium Truck % of Total Volume : 1.40  
Heavy Truck % of Total Volume : 2.40  
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 2: Montrose Rd (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 : 23.27 / 23.27 m  
 Receiver height : 1.50 / 1.50 m  
 Topography : 2 (Flat/gentle slope; with barrier)  
 Barrier angle1 : -90.00 deg Angle2 : 90.00 deg  
 Barrier height : 1.80 m  
 Barrier receiver distance : 8.00 / 8.00 m  
 Source elevation : 0.00 m  
 Receiver elevation : 0.00 m  
 Barrier elevation : 0.00 m  
 Reference angle : 0.00

Results segment # 1: QEW (day)

Source height = 1.19 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.19	1.50	1.49	1.49

ROAD (0.00 + 48.87 + 0.00) = 48.87 dBA  
 Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
 F.Adj W.Adj H.Adj B.Adj SubLeq

-90	90	0.56	77.66	0.00	-22.30	-1.29
0.00	0.00	-5.20	48.87			

Segment Leq : 48.87 dBA

Results segment # 2: Montrose Rd (day)

Source height = 1.24 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.24	1.50	1.41	1.41

ROAD (0.00 + 54.44 + 0.00) = 54.44 dBA  
 Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
 F.Adj W.Adj H.Adj B.Adj SubLeq

-90	90	0.56	64.16	0.00	-2.97	-1.28
0.00	0.00	-5.46	54.44			

Segment Leq : 54.44 dBA

Total Leq All Segments: 55.50 dBA

Results segment # 1: QEW (night)

Source height = 1.19 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.19	1.50	1.49	1.49

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

-90	90	0.56	77.66	0.00	-22.30	-1.29
0.00	0.00	-5.16	48.90			

Segment Leq : 48.90 dBA

Results segment # 2: Montrose Rd (night)

Source height = 1.25 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.25	1.50	1.41	1.41

ROAD (0.00 + 47.96 + 0.00) = 47.96 dBA

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

-----  
-90 90 0.56 57.67 0.00 -2.97 -1.28  
0.00 0.00 -5.45 47.96  
-----

Segment Leq : 47.96 dBA

Total Leq All Segments: 51.47 dBA

TOTAL Leq FROM ALL SOURCES (DAY):  
55.50

(NIGHT): 51.47

STAMSON 5.0 NORMAL REPORT

Date: 30-09-2022 09:35:45

MINISTRY OF ENVIRONMENT AND ENERGY /  
NOISE ASSESSMENT

**Filename: c15f.te Time Period:**

**Day/Night 16/8 hours**

**Description: Receiver C - 1.5m**

**Daytime/Nighttime 1.8m Fence**

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

-----  
Car traffic volume : 43922/21958  
veh/TimePeriod \*

Medium truck volume : 915/457  
veh/TimePeriod \*

Heavy truck volume : 915/457  
veh/TimePeriod \*

Posted speed limit : 100 km/h

Road gradient : 2 %

Road pavement : 1 (Typical asphalt or  
concrete)

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

24 hr Traffic Volume (AADT or SADT): 45100

Percentage of Annual Growth : 2.50

Number of Years of Growth : 17.00

Medium Truck % of Total Volume : 2.00

Heavy Truck % of Total Volume : 2.00

Day (16 hrs) % of Total Volume : 66.67

Data for Segment # 1: QEW (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 : 364.60 / 364.60 m

Receiver height : 1.50 / 1.50 m

Topography : 2 (Flat/gentle  
slope; with barrier)

Barrier angle1 : -90.00 deg Angle2 :  
90.00 deg

Barrier height : 1.80 m

Barrier receiver distance : 8.00 / 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 # 2: Montrose Rd  
(day/night)

-----  
Car traffic volume : 5648/628 veh/TimePeriod  
\*

Medium truck volume : 82/9 veh/TimePeriod  
\*

Heavy truck volume : 141/16 veh/TimePeriod  
\*

Posted speed limit : 60 km/h

Road gradient : 2 %

Road pavement : 1 (Typical asphalt or  
concrete)

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

24 hr Traffic Volume (AADT or SADT): 4972

Percentage of Annual Growth : 2.50

Number of Years of Growth : 11.00

Medium Truck % of Total Volume : 1.40

Heavy Truck % of Total Volume : 2.40

Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 2: Montrose Rd (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 : 20.99 / 20.99 m

Receiver height : 1.50 / 1.50 m

Topography : 2 (Flat/gentle  
slope; with barrier)

Barrier angle1 : -90.00 deg Angle2 : 90.00 deg  
Barrier height : 1.80 m  
Barrier receiver distance : 8.00 / 8.00 m  
Source elevation : 0.00 m  
Receiver elevation : 0.00 m  
Barrier elevation : 0.00 m  
Reference angle : 0.00

Results segment # 1: QEW (day)

Source height = 1.19 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.19	1.50	1.49	1.49

ROAD (0.00 + 49.54 + 0.00) = 49.54 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

-90	90	0.56	77.66	0.00	-21.64	-1.29	0.00	0.00	-5.20	49.54
-----	----	------	-------	------	--------	-------	------	------	-------	-------

Segment Leq : 49.54 dBA

Results segment # 2: Montrose Rd (day)

Source height = 1.24 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.24	1.50	1.40	1.40

ROAD (0.00 + 55.09 + 0.00) = 55.09 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

-90	90	0.56	64.16	0.00	-2.28	-1.28	0.00	0.00	-5.50	55.09
-----	----	------	-------	------	-------	-------	------	------	-------	-------

Segment Leq : 55.09 dBA

Total Leq All Segments: 56.16 dBA

Results segment # 1: QEW (night)

Source height = 1.19 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.19	1.50	1.49	1.49

ROAD (0.00 + 49.57 + 0.00) = 49.57 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

-90	90	0.56	77.66	0.00	-21.64	-1.29	0.00	0.00	-5.16	49.57
-----	----	------	-------	------	--------	-------	------	------	-------	-------

Segment Leq : 49.57 dBA

Results segment # 2: Montrose Rd (night)

Source height = 1.25 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.25	1.50	1.41	1.41

ROAD (0.00 + 48.62 + 0.00) = 48.62 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

-90	90	0.56	57.67	0.00	-2.28	-1.28	0.00	0.00	-5.50	48.62
-----	----	------	-------	------	-------	-------	------	------	-------	-------

Segment Leq : 48.62 dBA

Total Leq All Segments: 52.13 dBA

TOTAL Leq FROM ALL SOURCES (DAY):  
56.16

(NIGHT): 52.13

STAMSON 5.0 NORMAL REPORT

Date: 30-09-2022 10:23:42

MINISTRY OF ENVIRONMENT AND ENERGY /  
NOISE ASSESSMENT

**Filename: d15f.te Time Period:**

**Day/Night 16/8 hours**

**Description: Receiver D - 1.5m**

**Daytime/Nighttime 1.8m Fence**

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

-----  
Car traffic volume : 43922/21958  
veh/TimePeriod \*

Medium truck volume : 915/457  
veh/TimePeriod \*

Heavy truck volume : 915/457  
veh/TimePeriod \*

Posted speed limit : 100 km/h

Road gradient : 2 %

Road pavement : 1 (Typical asphalt or  
concrete)

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

24 hr Traffic Volume (AADT or SADT): 45100

Percentage of Annual Growth : 2.50

Number of Years of Growth : 17.00

Medium Truck % of Total Volume : 2.00

Heavy Truck % of Total Volume : 2.00

Day (16 hrs) % of Total Volume : 66.67

Data for Segment # 1: QEW (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 : 315.70 / 315.70 m

Receiver height : 1.50 / 1.50 m

Topography : 2 (Flat/gentle  
slope; with barrier)

Barrier angle1 : -90.00 deg Angle2 :  
90.00 deg

Barrier height : 1.80 m

Barrier receiver distance : 8.00 / 8.00 m

Source elevation : 0.00 m

Receiver elevation : 0.00 m

Barrier elevation : 0.00 m

Reference angle : 0.00

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

-----  
Car traffic volume : 5648/628 veh/TimePeriod  
\*

Medium truck volume : 82/9 veh/TimePeriod  
\*

Heavy truck volume : 141/16 veh/TimePeriod  
\*

Posted speed limit : 60 km/h

Road gradient : 2 %

Road pavement : 1 (Typical asphalt or  
concrete)

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

24 hr Traffic Volume (AADT or SADT): 4972

Percentage of Annual Growth : 2.50

Number of Years of Growth : 11.00

Medium Truck % of Total Volume : 1.40

Heavy Truck % of Total Volume : 2.40

Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 2: Montrose Rd (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 : 20.80 / 20.80 m

Receiver height : 1.50 / 1.50 m

Topography : 2 (Flat/gentle  
slope; with barrier)

Barrier angle1 : -90.00 deg Angle2 :  
90.00 deg

Barrier height : 1.80 m

Barrier receiver distance : 8.00 / 7.81 m

Source elevation : 0.00 m

Receiver elevation : 0.00 m

Barrier elevation : 0.00 m

Reference angle : 0.00

Results segment # 1: QEW (day)

-----

Source height = 1.19 m

Barrier height for grazing incidence

-----

Source ! Receiver ! Barrier ! Elevation of  
Height (m) ! Height (m) ! Height (m) ! Barrier  
Top (m)

-----+-----+-----  
1.19 ! 1.50 ! 1.49 ! 1.49

ROAD (0.00 + 50.51 + 0.00) = 50.51 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

-----  
-90 90 0.56 77.66 0.00 -20.66 -1.29  
0.00 0.00 -5.20 50.51  
-----

Segment Leq : 50.51 dBA

Results segment # 2: Montrose Rd (day)

-----

Source height = 1.24 m

Barrier height for grazing incidence

-----

Source ! Receiver ! Barrier ! Elevation of  
Height (m) ! Height (m) ! Height (m) ! Barrier  
Top (m)

-----+-----+-----  
1.24 ! 1.50 ! 1.40 ! 1.40

ROAD (0.00 + 55.15 + 0.00) = 55.15 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

-----  
-90 90 0.56 64.16 0.00 -2.21 -1.28  
0.00 0.00 -5.51 55.15  
-----

Segment Leq : 55.15 dBA

Total Leq All Segments: 56.43 dBA

Results segment # 1: QEW (night)

-----  
Source height = 1.19 m

Barrier height for grazing incidence

-----

Source ! Receiver ! Barrier ! Elevation of  
Height (m) ! Height (m) ! Height (m) ! Barrier  
Top (m)

-----+-----+-----  
1.19 ! 1.50 ! 1.49 ! 1.49

ROAD (0.00 + 50.51 + 0.00) = 50.51 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj  
F.Adj W.Adj H.Adj B.Adj SubLeq

-----  
-90 90 0.56 77.66 0.00 -20.66 -1.29  
0.00 0.00 -5.20 50.51  
-----

Segment Leq : 50.51 dBA

Results segment # 2: Montrose Rd (night)

-----

Source height = 1.25 m

Barrier height for grazing incidence

-----

Source ! Receiver ! Barrier ! Elevation of  
Height (m) ! Height (m) ! Height (m) ! Barrier  
Top (m)

-----+-----+-----  
1.25 ! 1.50 ! 1.41 ! 1.41

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

-----  
-90 90 0.56 57.67 0.00 -2.21 -1.28  
0.00 0.00 -5.50 48.67  
-----

Segment Leq : 48.67 dBA

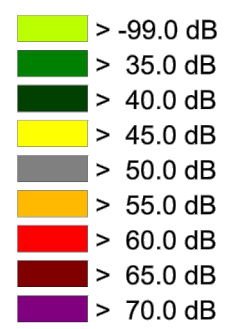
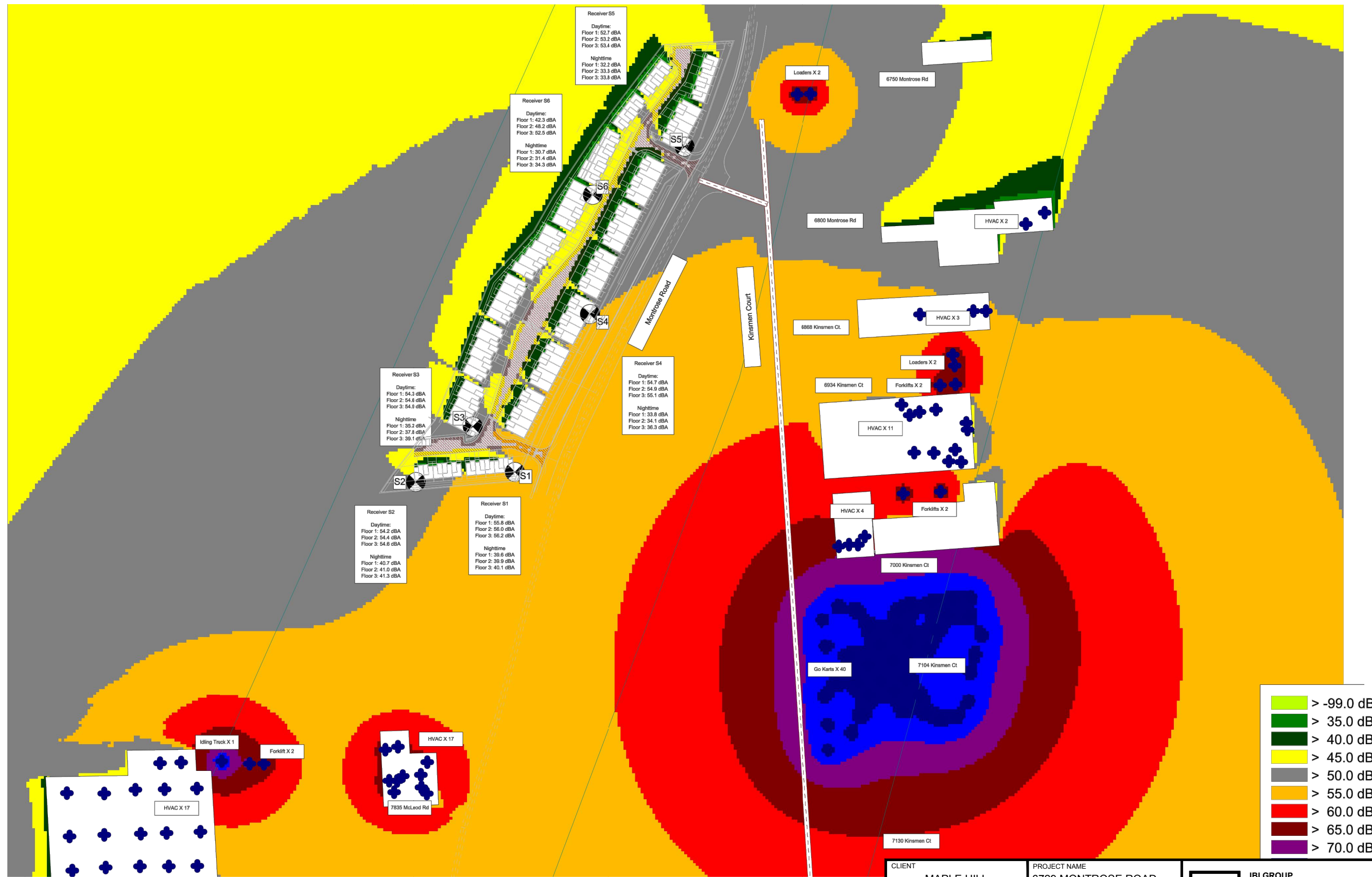
Total Leq All Segments: 52.70 dBA

TOTAL Leq FROM ALL SOURCES (DAY):  
56.43

(NIGHT): 52.70

# Appendix C – Cadna A Output

---



CLIENT <b>MAPLE HILL DEVELOPMENTS</b>		PROJECT NAME <b>6729 MONTROSE ROAD</b>		<b>IBI GROUP</b> Suite 101 - 410 Albert Street Waterloo ON N2L 3V3 Canada tel 519 585 2255 ibigroup.com	
SCALE: N.T.S.	DATE: 2022-09-28	FIGURE NAME <b>OFF-SITE SOURCES STATIONARY NOISE LEVELS</b>		FIGURE NO. 3	REVISION 0
PROJECT MGR: A.K.	DRAWN BY: I.A.				
CHECKED BY: A.K.	APPROVED BY: A.K.				
PROJECT NO: 126319					