Road Traffic and Stationary Noise Impact Study

7301 Lundy's Lane, Niagara Falls, Ontario

JJ-00568 NIS1

August 22, 2023, Reference No. JJ-00568-NIS1

Harsimran Kaur
(B.Arch, PG. Project Management)
Project Manager- RPD Studio
Suite 203, 7895 Tranmere Dr.
Mississauga ON L5S 1V9

Dear Mr. Kaur:

Re: Road Traffic and Stationary Noise Impact Study
7301 Lundy's Lane, Niagara Falls, Ontario

1. Introduction

JJ Acoustic Engineering Ltd. (JJAE) was retained to complete a Road Traffic and Stationary Noise Impact Study (Study) for the residential development located at 7301 Lundy's Lane, in Niagara Falls, Ontario (Site). The Site will be developed into five blocks of 3-storey stacked townhouses. JJAE has provided a copy of the most up-to-date Site Plan in Attachment A.

The Study was prepared consistent with Ontario Ministry of the Environment, Conservation and Park (MOECP) NPC 300, "Environmental Noise Guideline, Stationary and Transportation Sources– Approval and Planning" dated August 2013.

This Study has determined that the potential environmental noise impact from road traffic noise is significant. The proposed development will need the following: a requirement for central air-conditioning, noise warning clauses, special building components and a barrier that runs along the west side of the Site. Road traffic noise control requirements for the Site were determined based on road traffic volumes provided by the City of Niagara (City) and forecasted to 20 years from the date of this study.

The following attachments were included with this Study:

- Attachment A – Site Plan
- Attachment B – Traffic Data Summary Table, Sample Stamson Traffic Model Outputs and STC Calculations
- Attachment C – Stationary Noise Impact Figures
- Attachment D – Stationary Noise Impact Source Table

2. Road Traffic Analysis

2.1 Road Traffic Noise Modeling Methodology

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

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

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

2.2 Road Traffic Model Input Parameters

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

The Site has two significant roadways in the vicinity of the development: Lundy's Lane approximately 15 meters to the South of building A and Queens Elizabeth Expressway (North and South bound) approximately 30 meters to the West of Building A. Where there are intervening and off-site structures that provide line-of-sight obstruction to the roads, JJAE did not include line-of-sight obstruction in our analysis as to calculate worst-case noise impact.

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

JJAE has used a barrier that runs along the length of the QEW that sit between the Site and the roadway at a minimum of 2.55 meters from building A West façade. The height of the barrier is 3 meters.

2.2.1 Road Traffic Parameters

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

Lundy's Lane:

- Current AADT (2022): 16,890
- Forecast AADT (2043): 29.077
- Commercial Vehicle Rates: 2.37% medium trucks and 1.58% heavy trucks.
- Posted Speed Limit: 50 km/h
- Day Night Splits: 90% day and 10% night

QEW (North Bound):

- Current AADT (2019): 23,750
- Forecast AADT (2043): 42,957
- Commercial Vehicle Rates: 5% medium trucks and 15% heavy trucks.
- Posted Speed Limit: 100 km/h
- Day Night Splits: 66.67% day and 33.33% night

QEW (South Bound):

- Current AADT (2019): 23,750
- Forecast AADT (2043): 42,957
- Commercial Vehicle Rates: 5% medium trucks and 15% heavy trucks.
- Posted Speed Limit: 100 km/h
- Day Night Splits: 66.67% day and 33.33% night

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

No AADT data was supplied but AM and PM Peak values were supplied. JJAE has used a very conservative calculations method which takes the sum of the AM Peak and PM Peak values for the roadway and multiplies that by 5. This approach is used by traffic engineers as a conservative calculation of the AADT for a roadway and is the calculation method used in this report.

Future values were determined using an assumed Percentage Annual Growth of 2% over 20 years.

2.3 Road Traffic Noise Modeling Results

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

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

2.4 Road Traffic Modeling Discussion

Noise control requirements will be defined based on NPC 300.

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

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

OLA is located 5 meters from Building E North façade. JJAE has calculated the noise impact to the OLA to be 54 dBA. The location of the OLA has been indicated on Attachment A – Site Plan.

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

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

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

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

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

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

Warning Clause D: "This dwelling unit has been supplied with a central air conditioning system which will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the sound level limits of the Municipality and the Ministry of the Environment, Conservation and Parks."

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

At minimum, the building must be constructed to standard Ontario Building Code requirements. Improved building components are required and summarized in Table B.1. JJAE has assumed 30% window to floor area coverage for the 1st floor and that windows are thick and openable. JJAE has assumed 25% for the 2nd floor and that windows are sealed and thin. In addition, exterior wall compositions must be a minimum of STC 57, with brick veneer or masonry equivalent.

3. Stationary Noise Impact Analysis

3.1 Stationary Noise Impact Sound Level Criteria

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

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

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

3.2 Modelling Methodology

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

JJAE used the following assumptions in our Cadna A model:

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

4. Noise Impact Summary – From Site

The mechanical equipment for these buildings is similar to that of a single-family home and considered to be environmentally insignificant. Therefore, the noise impact from the Site to the neighboring buildings is considered to be environmentally insignificant.

5. Noise Impact Summary – From Environment to Site

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

- 1 Fan HVAC (16 hours daytime/ 4 hours nighttime)
- 2 Fan HVAC (16 hours daytime/ 4 hours nighttime)
- Representative MUA (Steady)

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

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

Building A	**Worst Case Daytime Sound Level (dBA)**	**Daytime Noise Limit (dBA)**	**Worst Case Nighttime Sound Level (dBA)**	**Nighttime Noise Limit (dBA)**	**Limits met**
North	38	50	36	45	Yes
East	41	50	38	45	Yes
South	44	50	41	45	Yes
West	42	50	39	45	Yes

From the table above it can be seen that all facades meet noise limits.

Building B	**Worst Case Daytime Sound Level (dBA)**	**Daytime Noise Limit (dBA)**	**Worst Case Nighttime Sound Level (dBA)**	**Nighttime Noise Limit (dBA)**	**Limits met**
North	40	50	37	45	Yes
East	39	50	36	45	Yes
South	40	50	37	45	Yes
West	42	50	39	45	Yes

From the table above it can be seen that all facades meet noise limits.

Building C	Worst Case Daytime Sound Level (dBA)	Daytime Noise Limit (dBA)	Worst Case Nighttime Sound Level (dBA)	Nighttime Noise Limit (dBA)	Limits met
North	39	50	36	45	Yes
East	38	50	35	45	Yes
South	41	50	38	45	Yes
West	42	50	39	45	Yes

From the table above it can be seen that all facades meet noise limits.

Building D	Worst Case Daytime Sound Level (dBA)	Daytime Noise Limit (dBA)	Worst Case Nighttime Sound Level (dBA)	Nighttime Noise Limit (dBA)	Limits met
North	35	50	31	45	Yes
East	38	50	34	45	Yes
South	42	50	39	45	Yes
West	41	50	38	45	Yes
OLA	<30	50	N/A	N/A	Yes

From the table above it can be seen that all facades meet noise limits.

Building E	Worst Case Daytime Sound Level (dBA)	Daytime Noise Limit (dBA)	Worst Case Nighttime Sound Level (dBA)	Nighttime Noise Limit (dBA)	Limits met
North	31	50	28	45	Yes
East	35	50	32	45	Yes
South	39	50	36	45	Yes
West	41	50	38	45	Yes

From the table above it can be seen that all facades meet noise limits.

6. Recommendations

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

Building A:

- Warning Clause Type D for all façades.
- A minimum of STC 30 is required for all exterior glazing for the first floor of the North, West façades, and all floors of the South façade using 25% window area to floor area and sealed thin windows.
- A minimum of STC 38 is required for all exterior glazing for the 2nd and 3rd floors of the North façade using 25% window area to floor area and sealed thin windows.
- A minimum of STC 25 is required for all exterior glazing for the 3rd floor of the South façade using 25% window area to floor area and sealed thin windows.
- A minimum of STC 40 is required for all exterior glazing for the West façade using 25% window area to floor area and sealed thin windows.
- Requirement for Air Conditioning for the entire building.

Building B:

- Warning Clause Type C for units along the East façade.
- Warning Clause Type D for the North, South and West façade.
- A minimum of STC 37 is required for all exterior glazing for the North façade using 25% window area to floor area and sealed thin windows.
- A minimum of STC 34 is required for all exterior glazing for the South façade using 25% window area to floor area and sealed thin windows.
- A minimum of STC 40 is required for all exterior glazing for the West façade using 25% window area to floor area and sealed thin windows.
- Requirement for Air Conditioning for the entire building.

Building C:

- Warning Clause Type C for units along the East façade.
- Warning Clause Type D for the North, South and West façade.
- A minimum of STC 37 is required for all exterior glazing for the North façade using 25% window area to floor area and sealed thin windows.
- A minimum of STC 24 is required for all exterior glazing for the South façade using 25% window area to floor area and sealed thin windows.
- A minimum of STC 40 is required for all exterior glazing for the West façade using 25% window area to floor area and sealed thin windows.
- Requirement for Air Conditioning for the entire building.

Building D:

- Warning Clause Type C for all unit along the East façade.
- Warning Clause Type D for the North, South and West façade.
- A minimum of STC 37 is required for all exterior glazing for the North façade using 25% window area to floor area and sealed thin windows.
- A minimum of STC 24 is required for all exterior glazing for the South façade using 25% window area to floor area and sealed thin windows.
- A minimum of STC 40 is required for all exterior glazing for the West façade using 25% window area to floor area and sealed thin windows.
- Requirement for Air Conditioning for the entire building.

Building E:

- Warning Clause Type D for the North, South and West façade.
- A minimum of STC 37 is required for all exterior glazing for the North façade.
- A minimum of STC 30 is required for all exterior glazing for the South façade.
- A minimum of STC 40 is required for all exterior glazing for the West façade.
- Although Air Conditioning is not required for the units along the East Façade, JJAE and the client require air conditioning for the entire building.

A barrier is required to run along the length of the property line on the west side of the Site, closest to the QEW and running parallel to it. JJAE has designed an acoustic barrier, which must be a minimum of 20 kg/m^2 surface density and have no holes, gaps, or cracks. Any gaps at the bottom of the wall required for drainage must be minimal. The dimension for the barrier must be a minimum height of 3 meters. An illustration is shown on Attachment A – Site Plan.

These have been summarized in Attachment B under Table B1

The stationary noise impacts to the site were evaluated and the sound level predictions were determined to be below the noise limits for all façades and OLA's.

The mechanical equipment for these buildings is similar to that of a single-family home and considered to be environmentally insignificant. Therefore, the noise impact from the Site to the neighboring buildings is considered to be environmentally insignificant.

7. Conclusions

The results of this Study indicate that the potential environmental impact from road traffic noise sources is significant. Mitigation measures will be required including ventilation requirements, special building components and noise warning clauses for all buildings. With the mitigation measures, provided in Section 6, there should no negative noise impact from this Site to neighboring buildings and no negative noise impact from the neighboring buildings to the Site.

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

Yours truly,

Written by: Reviewed by:

Aug. 22, 2023

Emmanuel Ghiorghis,
Acoustic Technician

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

JJ Acoustic Engineering Ltd.
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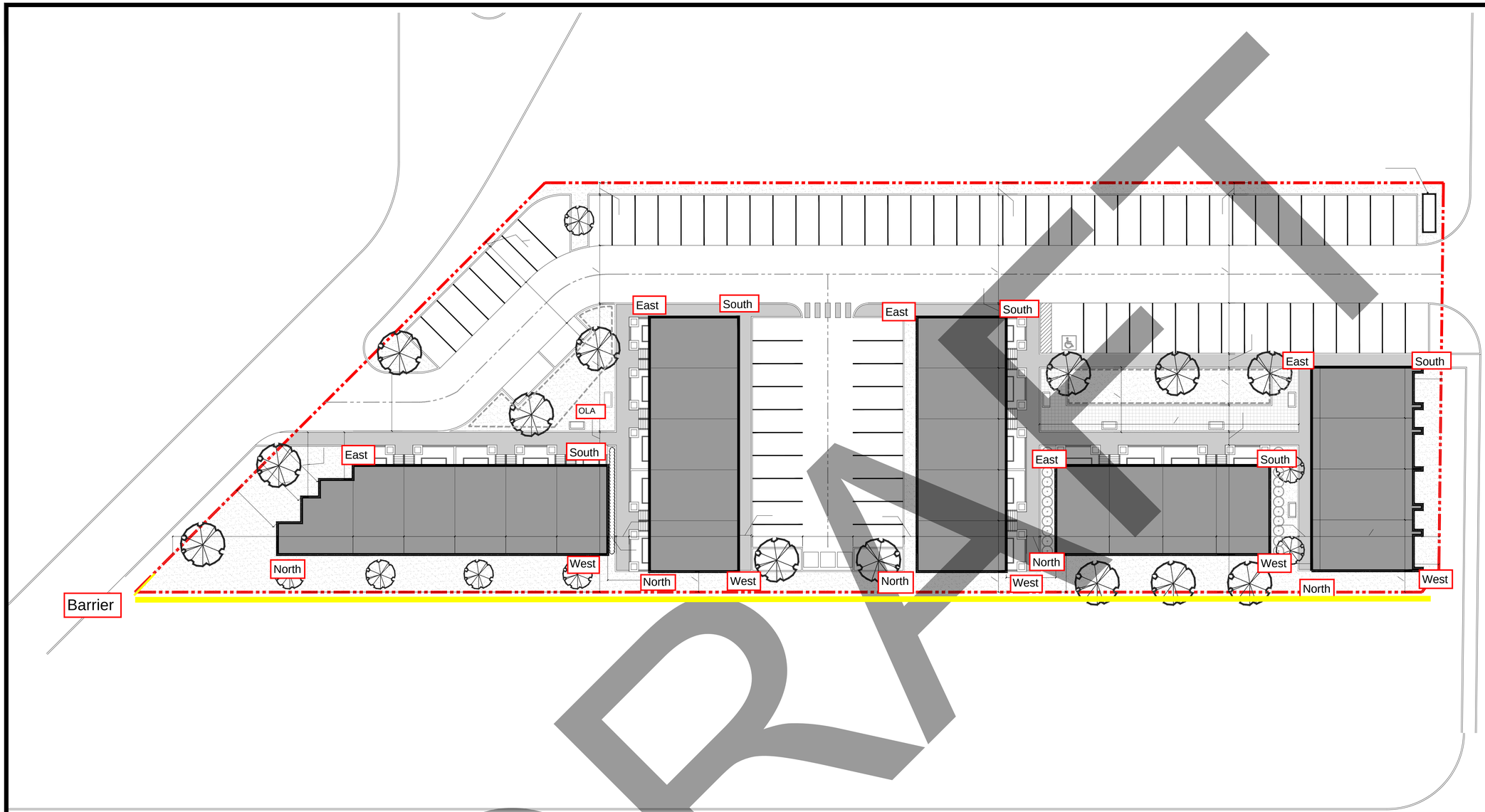
ATTACHMENT A



BUILDING	
A	12 (8 RESIDENTIAL + 4 RETAIL)
B	
C	
D	
E	
TOTAL UNITS	
REQUIRED PARKING	
REGULAR PARKING	72 (71 REGULAR + 1 BARRIER FREE)
COMMERCIAL PARKING	
TOTAL PROPOSED PARKING	

LOT AREA 69478.55 SQ.FT. (6454.77 SQ.MT.)
LOT COVERAGE 19729.71 SQ.FT. (1832.95 SQ.MT.)

RPDS
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ATTACHMENT B

Table B1

Road Traffic Noise Levels and Mitigation Measures Summary
7301 Lundy's Lane, Niagara Falls, Ontario
Building A

Point of Reception	**Road Sound Level** Daytime (dBA)	**Road Sound Level Nighttime (dBA)**	**Ventilation Requirements NPC 300**	**Warning Clauses From NPC 300**	**Special Building Components**
North Façade					
Plane of Window Level 1	63 (dBA)	63 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating of 30
Plane of Window Level 2	75 (dBA)	75 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating of 38
Plane of Window Level 3	75 (dBA)	75 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating of 38
East Façade					
Plane of Window Level 1	63 (dBA)	57 (dBA)	Requirement for Air Conditioning	Type C	Compliance with Ontario Building Code
Plane of Window Level 2	63 (dBA)	57 (dBA)	Requirement for Air Conditioning	Type C	Compliance with Ontario Building Code
Plane of Window Level 3	63 (dBA)	63 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating of 25
South Façade					
Plane of Window Level 1	67 (dBA)	64 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating of 30
Plane of Window Level 2	69 (dBA)	65 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating of 30
Plane of Window Level 3	70 (dBA)	67 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating of 30
West Façade					
Plane of Window Level 1	69 (dBA)	65 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating 30
Plane of Window Level 2	78 (dBA)	78 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating of 40
Plane of Window Level 3	78 (dBA)	78 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating of 40

Building A

Outdoor Sound Level	78	Day/Night	night
Indoor Sound Level	40	Road/Rail	Road
Noise Reduction	41		
Angle of Sound	0 to 90 Degrees	Angle Correction	0
		Sum	41

Component	Window	Sum	41
Sound Energy Transmitted	100 %	Table 3	0
Component Area	25 % Floor Area		
Room Floor Area	100 25		
Room Absorption Category	Intermediate	Table 4	-5
Noise Spectrum Type	Mixed Road Traffic, Distance Aircraft		
Component Category	Sealed Thin Window	Table 5	4
	REQUIRED STC FOR COMPONENT		40

Component	Exterior Wall	Sum	41
Sound Energy Transmitted	10 %	Table 3	10
Component Area	80 % Floor Area		
Room Floor Area	100 80		
Room Absorption Category	Intermediate	Table 4	0
Noise Spectrum Type	Mixed Road Traffic, Distance Aircraft		
Component Category	Exterior Wall	Table 5	7
	REQUIRED STC FOR COMPONENT		58

Table B1

Road Traffic Noise Levels and Mitigation Measures Summary
7301 Lundy's Lane, Niagara Falls, Ontario
Building B

Point of Reception	**Road Sound Level** Daytime (dBA)	**Road Sound Level Nighttime (dBA)**	**Ventilation Requirements NPC 300**	**Warning Clauses From NPC 300**	**Special Building Components**
North Façade					
Plane of Window Level 1	63 (dBA)	63 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating 37
Plane of Window Level 2	75 (dBA)	75 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating of 37
Plane of Window Level 3	75 (dBA)	75 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating of 37
East Façade					
Plane of Window Level 1	60 (dBA)	53 (dBA)	Requirement for Air Conditioning	Type C	Compliance with Ontario Building Code
Plane of Window Level 2	60 (dBA)	54 (dBA)	Requirement for Air Conditioning	Type C	Compliance with Ontario Building Code
Plane of Window Level 3	60 (dBA)	53 (dBA)	Requirement for Air Conditioning	Type C	Compliance with Ontario Building Code
South Façade					
Plane of Window Level 1	68 (dBA)	64 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating 34
Plane of Window Level 2	69 (dBA)	67 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating 34
Plane of Window Level 3	73 (dBA)	72 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating of 34
West Façade					
Plane of Window Level 1	68 (dBA)	67 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating 40
Plane of Window Level 2	78 (dBA)	78 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating of 40
Plane of Window Level 3	78 (dBA)	78 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating of 40

Building B

Outdoor Sound Level	78	Day/Night	night
Indoor Sound Level	40	Road/Rail	Road
Noise Reduction	41		
Angle of Sound	0 to 90 Degrees	Angle Correction	0
		Sum	41

Component	Window	Sum	41
Sound Energy Transmitted	100 %	Table 3	0
Component Area	25 % Floor Area		
Room Floor Area	100 25		
Room Absorption Category	Intermediate	Table 4	-5
Noise Spectrum Type	Mixed Road Traffic, Distance Aircraft		
Component Category	Sealed Thin Window	Table 5	4
	REQUIRED STC FOR COMPONENT		40

Component	Exterior Wall	Sum	41
Sound Energy Transmitted	10 %	Table 3	10
Component Area	20 % Floor Area		
Room Floor Area	100 20		
Room Absorption Category	Intermediate	Table 4	-6
Noise Spectrum Type	Mixed Road Traffic, Distance Aircraft		
Component Category	Exterior Wall	Table 5	7
	REQUIRED STC FOR COMPONENT		52

Table B1

Road Traffic Noise Levels and Mitigation Measures Summary
7301 Lundy's Lane, Niagara Falls, Ontario
Building C

Point of Reception	**Road Sound Level** Daytime (dBA)	**Road Sound Level Nighttime (dBA)**	**Ventilation Requirements NPC 300**	**Warning Clauses From NPC 300**	**Special Building Components**
North Façade					
Plane of Window Level 1	63 (dBA)	63 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating 37
Plane of Window Level 2	75 (dBA)	75 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating of 37
Plane of Window Level 3	75 (dBA)	75 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating of 37
East Façade					
Plane of Window Level 1	58 (dBA)	51 (dBA)	Requirement for Air Conditioning	Type C	Compliance with Ontario Building Code
Plane of Window Level 2	58 (dBA)	51 (dBA)	Requirement for Air Conditioning	Type C	Compliance with Ontario Building Code
Plane of Window Level 3	58 (dBA)	51 (dBA)	Requirement for Air Conditioning	Type C	Compliance with Ontario Building Code
South Façade					
Plane of Window Level 1	64 (dBA)	60 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating 24
Plane of Window Level 2	64 (dBA)	61 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating 24
Plane of Window Level 3	65 (dBA)	62 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating 24
West Façade					
Plane of Window Level 1	67 (dBA)	65 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating 40
Plane of Window Level 2	78 (dBA)	78 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating of 40
Plane of Window Level 3	78 (dBA)	78 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating of 40

Building C

Outdoor Sound Level	78	Day/Night	Night
Indoor Sound Level	40	Road/Rail	Road
Noise Reduction	41		
Angle of Sound	0 to 90 Degrees	Angle Correction	0
		Sum	41

Component	Window	Sum	41
Sound Energy Transmitted	100 %	Table 3	0
Component Area	25 % Floor Area		
Room Floor Area	100 25		
Room Absorption Category	Intermediate	Table 4	-5
Noise Spectrum Type	Mixed Road Traffic, Distance Aircraft		
Component Category	Sealed Thin Window	Table 5	4
	REQUIRED STC FOR COMPONENT		40

Component	Exterior Wall	Sum	41
Sound Energy Transmitted	10 %	Table 3	10
Component Area	65 % Floor Area		
Room Floor Area	100 63		
Room Absorption Category	Intermediate	Table 4	-1
Noise Spectrum Type	Mixed Road Traffic, Distance Aircraft		
Component Category	Exterior Wall	Table 5	7
	REQUIRED STC FOR COMPONENT		57

Table B1

Road Traffic Noise Levels and Mitigation Measures Summary
7301 Lundy's Lane, Niagara Falls, Ontario
Building D

Point of Reception	**Road Sound Level** Daytime (dBA)	**Road Sound Level Nighttime (dBA)**	**Ventilation Requirements NPC 300**	**Warning Clauses From NPC 300**	**Special Building Components**
North Façade					
Plane of Window Level 1	63 (dBA)	63 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating of 37
Plane of Window Level 2	75 (dBA)	75 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating of 37
Plane of Window Level 3	75 (dBA)	75 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating of 37
East Façade					
Plane of Window Level 1	56 (dBA)	50 (dBA)	Requirement for Air Conditioning	Type C	Compliance with Ontario Building Code
Plane of Window Level 2	56 (dBA)	50 (dBA)	Requirement for Air Conditioning	Type C	Compliance with Ontario Building Code
Plane of Window Level 3	56 (dBA)	50 (dBA)	Requirement for Air Conditioning	Type C	Compliance with Ontario Building Code
South Façade					
Plane of Window Level 1	62 (dBA)	62 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating of 24
Plane of Window Level 2	63 (dBA)	62 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating of 24
Plane of Window Level 3	64 (dBA)	62 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating of 24
West Façade					
Plane of Window Level 1	67 (dBA)	67 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating of 32
Plane of Window Level 2	78 (dBA)	78 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating of 40
Plane of Window Level 3	78 (dBA)	78 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating of 40

Building D

Outdoor Sound Level	78	Day/Night	Night
Indoor Sound Level	40	Road/Rail	Road
Noise Reduction	41		
Angle of Sound	0 to 90 Degrees	Angle Correction	0
		Sum	41

Component	Window	Sum	41
Sound Energy Transmitted	100 %	Table 3	0
Component Area	25 % Floor Area		
Room Floor Area	100 25		
Room Absorption Category	Intermediate	Table 4	-5
Noise Spectrum Type	Mixed Road Traffic, Distance Aircraft		
Component Category	Sealed Thin Window	Table 5	4
	REQUIRED STC FOR COMPONENT		40

Component	Exterior Wall	Sum	41
Sound Energy Transmitted	10 %	Table 3	10
Component Area	65 % Floor Area		
Room Floor Area	100 63		
Room Absorption Category	Intermediate	Table 4	-1
Noise Spectrum Type	Mixed Road Traffic, Distance Aircraft		
Component Category	Exterior Wall	Table 5	7
	REQUIRED STC FOR COMPONENT		57

Table B1

Road Traffic Noise Levels and Mitigation Measures Summary
7301 Lundy's Lane, Niagara Falls, Ontario
Building E

Point of Reception	**Road Sound Level** Daytime (dBA)	**Road Sound Level Nighttime (dBA)**	**Ventilation Requirements NPC 300**	**Warning Clauses From NPC 300**	**Special Building Components**
North Façade					
Plane of Window Level 1	64 (dBA)	64 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating of 26
Plane of Window Level 2	75 (dBA)	75 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating of 37
East Façade					
Plane of Window Level 1	55 (dBA)	48 (dBA)	Not Required	Not Required	Compliance with Ontario Building Code
Plane of Window Level 2	55 (dBA)	48 (dBA)	Not Required	Not Required	Compliance with Ontario Building Code
South Façade (1)					
Plane of Window Level 1	64 (dBA)	62 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating of 30
Plane of Window Level 2	67 (dBA)	67 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating of 30
West Façade					
Plane of Window Level 1	67 (dBA)	67 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating of 30
Plane of Window Level 2	78 (dBA)	78 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating of 40
Outdoor Living Area					
OLA	54 (dBA)	N/A	N/A	N/A	N/A

Notes
`(1) The OLA is shielded by the building. JJAE has assumed a conservative 10 dBA reduction in sound level from the South Façade for the OLA.

Building E

Outdoor Sound Level	78	Day/Night	Night
Indoor Sound Level	40	Road/Rail	Road
Noise Reduction	41		
Angle of Sound	0 to 90 Degrees	Angle Correction	0
		Sum	41

Component	Window	Sum	41
Sound Energy Transmitted	100 %	Table 3	0
Component Area	25 % Floor Area		
Room Floor Area	100 25		
Room Absorption Category	Intermediate	Table 4	-5
Noise Spectrum Type	Mixed Road Traffic, Distance Aircraft		
Component Category	Openable Thick Window	Table 5	4
	REQUIRED STC FOR COMPONENT		40

Component	Exterior Wall	Sum	41
Sound Energy Transmitted	10 %	Table 3	10
Component Area	80 % Floor Area		
Room Floor Area	100 80		
Room Absorption Category	Intermediate	Table 4	0
Noise Spectrum Type	Mixed Road Traffic, Distance Aircraft		
Component Category	Exterior Wall	Table 5	7
	REQUIRED STC FOR COMPONENT		58

MH Corbin Traffic Analyzer Study
Computer Generated Summary Report
City: Niagara Region
Street: 610306 - EB
Location: 610306

A study of vehicle traffic was conducted with the device having serial number 405294. The study was done in the EB lane at 610306 - EB in Niagara Region, ON in county. The study began on 2021-08-31 at 12:00 AM and concluded on 2021-09-01 at 12:00 AM, lasting a total of 24.00 hours. Traffic statistics were recorded in 15 minute time periods. The total recorded volume showed 12,060 vehicles passed through the location with a peak volume of 258 on 2021-08-31 at [05:30 PM-05:45 PM] and a minimum volume of 9 on 2021-08-31 at [03:45 AM-04:00 AM]. The AADT count for this study was 12,060.

SPEED

Chart 1 lists the values of the speed bins and the total traffic volume for each bin. At least half the vehicles were traveling in the 39 KM/H range or lower. The average speed for all classifed vehicles was 39 KM/H with 24.54% vehicles exceeding the posted speed of 50 KM/H. 0.00% percent of the total vehicles were traveling in excess of 89 KM/H. The mode speed for this traffic study was 39KM/H and the 85th percentile was 53.76 KM/H.

< to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85 to 89	90 to 94	95 to 99	100 to 104	105 to >
4342	1945	2783	1524	830	335	147	71	22	21	0	0	0	0	0

CHART 1

CLASSIFICATION

Chart 2 lists the values of the classification bins and the total traffic volume accumulated for each bin.
Most of the vehicles classified during the study were Passenger Vehicles. The number of Passenger Vehicles in the study was 11679 which represents 97 percent of the total classified vehicles. The number of Small Trucks in the study was 110 which represents 1 percent of the total classified vehicles. The number of Trucks/Buses in the study was 121 which represents 1 percent of the total classified vehicles. The number of Tractor Trailers in the study was 110 which represents 1 percent of the total classified vehicles.

< to 4.9	5.0 to 7.9	8.0 to 9.9	10.0 to 12.9	13.0 to 15.9	16.0 to 18.9	19.0 to 21.9	22.0 to >							
6183	5496	110	121	50	15	38	7							

CHART 2

HEADWAY

During the peak traffic period, on 2021-08-31 at [05:30 PM-05:45 PM] the average headway between vehicles was 3.475 seconds. During the slowest traffic period, on 2021-08-31 at [03:45 AM-04:00 AM] the average headway between vehicles was 90 seconds.

WEATHER

The roadway surface temperature over the period of the study varied between 25.00 and 44.00 degrees C.

MH Corbin Traffic Analyzer Study
Computer Generated Summary Report
City: Niagara Region
Street: 610306 - WB
Location: 610306

A study of vehicle traffic was conducted with the device having serial number 405077. The study was done in the WB lane at 610306 - WB in Niagara Region, ON in county. The study began on 2021-08-31 at 12:00 AM and concluded on 2021-09-01 at 12:00 AM, lasting a total of 24.00 hours. Traffic statistics were recorded in 15 minute time periods. The total recorded volume showed 11,871 vehicles passed through the location with a peak volume of 247 on 2021-08-31 at [05:15 PM-05:30 PM] and a minimum volume of 11 on 2021-08-31 at [04:30 AM-04:45 AM]. The AADT count for this study was 11,871.

SPEED

Chart 1 lists the values of the speed bins and the total traffic volume for each bin. At least half the vehicles were traveling in the 45 - 50 KM/H range or lower. The average speed for all classifed vehicles was 49 KM/H with 41.14% vehicles exceeding the posted speed of 50 KM/H. 0.00% percent of the total vehicles were traveling in excess of 89 KM/H. The mode speed for this traffic study was 45KM/H and the 85th percentile was 57.26 KM/H.

< to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85 to 89	90 to 94	95 to 99	100 to 104	105 to >
841	1763	4360	2509	1288	633	256	109	48	24	0	0	0	0	0

CHART 1

CLASSIFICATION

Chart 2 lists the values of the classification bins and the total traffic volume accumulated for each bin.
Most of the vehicles classified during the study were Passenger Vehicles. The number of Passenger Vehicles in the study was 11624 which represents 98 percent of the total classified vehicles. The number of Small Trucks in the study was 55 which represents 0 percent of the total classified vehicles. The number of Trucks/Buses in the study was 83 which represents 1 percent of the total classified vehicles. The number of Tractor Trailers in the study was 69 which represents 1 percent of the total classified vehicles.

< to 4.9	5.0 to 7.9	8.0 to 9.9	10.0 to 12.9	13.0 to 15.9	16.0 to 18.9	19.0 to 21.9	22.0 to >							
5681	5943	55	83	25	6	37	1							

CHART 2

HEADWAY

During the peak traffic period, on 2021-08-31 at [05:15 PM-05:30 PM] the average headway between vehicles was 3.629 seconds. During the slowest traffic period, on 2021-08-31 at [04:30 AM-04:45 AM] the average headway between vehicles was 75 seconds.

WEATHER

The roadway surface temperature over the period of the study varied between 24.00 and 45.00 degrees C.

Time/Class Report

Device ID: 405294	**Location:** 7908			**Raw Count:** 12,060	
Operator: MD	**Lane:** EB			**AADT Count:** 12,060	
Begin: 08-31-2021 12:00 AM	**Street:** 610306 - EB			**AADT Factor:** 1	
End: 09-01-2021 12:00 AM	**City:** Niagara Region			**Speed Limit:** 50	
Hours: 24.00	**County:**				
Period (min): 15	**State:** ON				

Date And Time Range	< to 15	16 to 25	26 to 32	33 to 42	43 to 51	52 to 61	62 to 71	72 to >	Total
Tue,08-31-2021									
[00:00-00:15]	22	12	0	0	0	0	0	0	34
[00:15-00:30]	20	18	0	0	0	0	0	0	38
[00:30-00:45]	13	12	1	1	0	0	0	0	27
[00:45-01:00]	19	14	0	0	0	0	0	0	33
	74	56	1	1	0	0	0	0	132
[01:00-01:15]	9	10	0	0	0	0	0	0	19
[01:15-01:30]	7	8	0	0	0	0	0	0	15
[01:30-01:45]	10	7	0	0	0	0	0	0	17
[01:45-02:00]	7	14	0	0	0	0	0	0	21
	33	39	0	0	0	0	0	0	72
[02:00-02:15]	7	11	0	0	0	0	0	0	18
[02:15-02:30]	3	9	0	0	0	0	0	0	12
[02:30-02:45]	7	4	0	0	0	0	0	0	11
[02:45-03:00]	6	7	0	0	1	0	0	0	14
	23	31	0	0	1	0	0	0	55
[03:00-03:15]	7	4	0	0	0	0	0	0	11
[03:15-03:30]	5	7	1	0	0	0	0	0	13
[03:30-03:45]	4	4	0	1	0	0	0	0	9
[03:45-04:00]	7	2	0	0	0	0	0	0	9
	23	17	1	1	0	0	0	0	42
[04:00-04:15]	4	9	0	0	0	0	0	0	13
[04:15-04:30]	7	6	0	0	0	0	0	0	13
[04:30-04:45]	9	5	0	1	0	0	0	0	15
[04:45-05:00]	4	4	0	1	0	0	0	0	9
	24	24	0	2	0	0	0	0	50
[05:00-05:15]	7	3	0	0	0	0	0	0	10
[05:15-05:30]	7	6	0	1	0	0	0	0	14
[05:30-05:45]	16	14	0	1	0	0	0	0	31
[05:45-06:00]	21	12	0	0	0	0	0	0	33
	51	35	0	2	0	0	0	0	88
[06:00-06:15]	17	24	0	1	0	0	1	0	43
[06:15-06:30]	16	21	0	0	0	0	0	0	37
[06:30-06:45]	39	31	0	0	1	0	1	0	72
[06:45-07:00]	24	32	0	1	1	0	0	0	58
	96	108	0	2	2	0	2	0	210
[07:00-07:15]	23	35	1	1	1	0	1	0	62
[07:15-07:30]	33	39	0	1	2	0	0	0	75
[07:30-07:45]	29	53	0	1	2	0	1	0	86

Time/Class Report

Device ID: 405294	**Location:** 7908			**Raw Count:** 12,060	
Operator: MD	**Lane:** EB			**AADT Count:** 12,060	
Begin: 08-31-2021 12:00 AM	**Street:** 610306 - EB			**AADT Factor:** 1	
End: 09-01-2021 12:00 AM	**City:** Niagara Region			**Speed Limit:** 50	
Hours: 24.00	**County:**				
Period (min): 15	**State:** ON				

Date And Time Range	< to 15	16 to 25	26 to 32	33 to 42	43 to 51	52 to 61	62 to 71	72 to >	Total
Tue,08-31-2021									
[07:45-08:00]	63	54	1	1	1	0	0	0	120
	148	181	2	4	6	0	2	0	343
[08:00-08:15]	47	63	3	0	0	0	1	0	114
[08:15-08:30]	57	66	1	3	1	0	0	0	128
[08:30-08:45]	66	69	2	1	0	0	1	0	139
[08:45-09:00]	92	78	0	1	1	1	0	0	173
	262	276	6	5	2	1	2	0	554
[09:00-09:15]	70	78	2	0	0	0	1	0	151
[09:15-09:30]	82	81	4	0	0	0	0	0	167
[09:30-09:45]	76	79	2	2	0	1	1	0	161
[09:45-10:00]	75	82	4	1	0	0	0	0	162
	303	320	12	3	0	1	2	0	641
[10:00-10:15]	81	83	2	0	2	0	1	0	169
[10:15-10:30]	79	77	2	0	0	0	0	0	158
[10:30-10:45]	63	75	0	1	1	0	1	0	141
[10:45-11:00]	100	92	2	2	4	0	2	0	202
	323	327	6	3	7	0	4	0	670
[11:00-11:15]	96	83	4	5	3	0	1	0	192
[11:15-11:30]	114	99	6	5	1	0	0	1	226
[11:30-11:45]	95	109	2	3	2	0	1	1	213
[11:45-12:00]	118	102	3	4	1	0	0	0	228
	423	393	15	17	7	0	2	2	859
[12:00-12:15]	110	105	3	2	3	2	2	1	228
[12:15-12:30]	130	105	7	6	1	1	1	0	251
[12:30-12:45]	110	81	2	2	0	1	1	0	197
[12:45-13:00]	115	92	1	6	0	0	0	0	214
	465	383	13	16	4	4	4	1	890
[13:00-13:15]	116	99	5	3	1	0	1	1	226
[13:15-13:30]	139	104	3	6	2	0	0	1	255
[13:30-13:45]	134	104	1	5	2	0	1	0	247
[13:45-14:00]	112	90	2	4	1	0	0	0	209
	501	397	11	18	6	0	2	2	937
[14:00-14:15]	130	96	0	2	0	2	1	0	231
[14:15-14:30]	101	83	1	5	0	1	1	0	192
[14:30-14:45]	120	112	1	2	0	1	1	0	237
[14:45-15:00]	98	85	1	2	1	0	0	0	187
	449	376	3	11	1	4	3	0	847

Time/Class Report

Device ID: 405294	**Location:** 7908			**Raw Count:** 12,060	
Operator: MD	**Lane:** EB			**AADT Count:** 12,060	
Begin: 08-31-2021 12:00 AM	**Street:** 610306 - EB			**AADT Factor:** 1	
End: 09-01-2021 12:00 AM	**City:** Niagara Region			**Speed Limit:** 50	
Hours: 24.00	**County:**				
Period (min): 15	**State:** ON				

Date And Time Range	< to 15	16 to 25	26 to 32	33 to 42	43 to 51	52 to 61	62 to 71	72 to >	Total
Tue,08-31-2021									
[15:00-15:15]	118	85	1	1	2	1	0	1	209
[15:15-15:30]	109	108	0	2	1	0	1	0	221
[15:30-15:45]	127	91	1	3	1	0	1	0	224
[15:45-16:00]	128	91	4	3	1	0	0	0	227
	482	375	6	9	5	1	2	1	881
[16:00-16:15]	101	93	3	0	0	0	1	0	198
[16:15-16:30]	112	95	2	0	1	0	0	0	210
[16:30-16:45]	123	109	3	4	0	0	0	1	240
[16:45-17:00]	125	108	2	2	0	0	0	0	237
	461	405	10	6	1	0	1	1	885
[17:00-17:15]	108	93	0	3	1	0	1	0	206
[17:15-17:30]	128	99	1	1	0	1	0	0	230
[17:30-17:45]	134	115	4	1	1	0	1	0	256
[17:45-18:00]	104	85	2	2	1	0	1	0	195
	474	392	7	7	3	1	3	0	887
[18:00-18:15]	119	97	1	2	0	0	0	0	219
[18:15-18:30]	98	87	0	0	2	0	1	0	188
[18:30-18:45]	102	67	2	1	0	0	1	0	173
[18:45-19:00]	119	90	2	0	1	0	0	0	212
	438	341	5	3	3	0	2	0	792
[19:00-19:15]	88	70	1	3	0	0	1	0	163
[19:15-19:30]	106	93	4	0	0	2	0	0	205
[19:30-19:45]	87	82	0	1	1	0	1	0	172
[19:45-20:00]	74	62	0	0	0	0	0	0	136
	355	307	5	4	1	2	2	0	676
[20:00-20:15]	85	73	0	1	0	0	1	0	160
[20:15-20:30]	70	66	1	0	0	0	0	0	137
[20:30-20:45]	75	84	2	2	1	1	1	0	166
[20:45-21:00]	72	81	0	0	0	0	0	0	153
	302	304	3	3	1	1	2	0	616
[21:00-21:15]	69	52	2	0	0	0	1	0	124
[21:15-21:30]	50	42	0	0	0	0	0	0	92
[21:30-21:45]	41	53	0	0	0	0	1	0	95
[21:45-22:00]	53	41	0	2	0	0	0	0	96
	213	188	2	2	0	0	2	0	407
[22:00-22:15]	40	38	0	0	0	0	1	0	79
[22:15-22:30]	46	31	1	0	0	0	0	0	78
[22:30-22:45]	39	30	0	0	0	0	0	0	69

Time/Class Report

Device ID: 405294	**Location:** 7908			**Raw Count:** 12,060	
Operator: MD	**Lane:** EB			**AADT Count:** 12,060	
Begin: 08-31-2021 12:00 AM	**Street:** 610306 - EB			**AADT Factor:** 1	
End: 09-01-2021 12:00 AM	**City:** Niagara Region			**Speed Limit:** 50	
Hours: 24.00	**County:**				
Period (min): 15	**State:** ON				

Date And Time Range	< to 15	16 to 25	26 to 32	33 to 42	43 to 51	52 to 61	62 to 71	72 to >	Total
Tue,08-31-2021									
[22:45-23:00]	30	37	1	0	0	0	0	0	68
	155	136	2	0	0	0	1	0	294
[23:00-23:15]	26	22	0	2	0	0	0	0	50
[23:15-23:30]	20	18	0	0	0	0	0	0	38
[23:30-23:45]	34	26	0	0	0	0	0	0	60
[23:45-00:00]	25	19	0	0	0	0	0	0	44
	105	85	0	2	0	0	0	0	192
08-31-2021 12:00 AM									
09-01-2021 12:00 AM	6183	5496	110	121	50	15	38	7	12020

Time/Class Report

Device ID: 405077	**Location:** 7908			**Raw Count:** 11,871	
Operator: MD	**Lane:** WB			**AADT Count:** 11,871	
Begin: 08-31-2021 12:00 AM	**Street:** 610306 - WB			**AADT Factor:** 1	
End: 09-01-2021 12:00 AM	**City:** Niagara Region			**Speed Limit:** 50	
Hours: 24.00	**County:**				
Period (min): 15	**State:** ON				

Date And Time Range	< to 15	16 to 25	26 to 32	33 to 42	43 to 51	52 to 61	62 to 71	72 to >	Total
Tue,08-31-2021									
[00:00-00:15]	25	22	0	0	0	0	0	0	47
[00:15-00:30]	30	28	1	0	0	0	0	0	59
[00:30-00:45]	27	22	0	0	0	0	0	0	49
[00:45-01:00]	19	19	0	0	0	0	0	0	38
	101	91	1	0	0	0	0	0	193
[01:00-01:15]	19	10	0	0	0	0	0	0	29
[01:15-01:30]	13	16	1	0	0	0	0	0	30
[01:30-01:45]	16	16	0	0	0	0	0	0	32
[01:45-02:00]	16	15	0	0	0	0	0	0	31
	64	57	1	0	0	0	0	0	122
[02:00-02:15]	11	11	0	0	0	0	0	0	22
[02:15-02:30]	15	7	0	1	0	0	0	0	23
[02:30-02:45]	15	15	0	0	0	0	0	0	30
[02:45-03:00]	5	11	0	1	0	0	0	0	17
	46	44	0	2	0	0	0	0	92
[03:00-03:15]	8	8	0	0	0	0	0	0	16
[03:15-03:30]	11	7	0	0	0	0	0	0	18
[03:30-03:45]	9	4	0	1	0	0	0	0	14
[03:45-04:00]	8	13	0	0	0	0	0	1	22
	36	32	0	1	0	0	0	1	70
[04:00-04:15]	8	5	0	0	1	0	0	0	14
[04:15-04:30]	8	9	0	0	0	0	0	0	17
[04:30-04:45]	4	7	0	0	0	0	0	0	11
[04:45-05:00]	5	6	0	1	0	0	0	0	12
	25	27	0	1	1	0	0	0	54
[05:00-05:15]	9	6	0	1	0	0	0	0	16
[05:15-05:30]	8	11	0	0	0	0	0	0	19
[05:30-05:45]	10	12	0	0	0	0	0	0	22
[05:45-06:00]	8	14	1	1	0	0	0	0	24
	35	43	1	2	0	0	0	0	81
[06:00-06:15]	13	25	0	0	0	0	0	0	38
[06:15-06:30]	19	23	0	0	0	0	1	0	43
[06:30-06:45]	20	21	0	0	0	0	0	0	41
[06:45-07:00]	12	27	0	1	2	0	1	0	43
	64	96	0	1	2	0	2	0	165
[07:00-07:15]	22	31	0	1	0	0	0	0	54
[07:15-07:30]	25	33	0	2	0	0	1	0	61
[07:30-07:45]	31	53	0	1	0	0	0	0	85

Time/Class Report

Device ID: 405077	**Location:** 7908			**Raw Count:** 11,871	
Operator: MD	**Lane:** WB			**AADT Count:** 11,871	
Begin: 08-31-2021 12:00 AM	**Street:** 610306 - WB			**AADT Factor:** 1	
End: 09-01-2021 12:00 AM	**City:** Niagara Region			**Speed Limit:** 50	
Hours: 24.00	**County:**				
Period (min): 15	**State:** ON				

Date And Time Range	< to 15	16 to 25	26 to 32	33 to 42	43 to 51	52 to 61	62 to 71	72 to >	Total
Tue,08-31-2021									
[07:45-08:00]	33	36	1	1	0	0	1	0	72
	111	153	1	5	0	0	2	0	272
[08:00-08:15]	32	46	0	0	1	0	0	0	79
[08:15-08:30]	32	42	2	3	0	0	1	0	80
[08:30-08:45]	28	61	0	1	0	0	0	0	90
[08:45-09:00]	46	49	2	2	1	0	1	0	101
	138	198	4	6	2	0	2	0	350
[09:00-09:15]	45	62	1	1	0	0	0	0	109
[09:15-09:30]	50	56	0	1	1	1	0	0	109
[09:30-09:45]	58	85	2	0	2	0	0	0	147
[09:45-10:00]	71	72	1	0	0	0	1	0	145
	224	275	4	2	3	1	1	0	510
[10:00-10:15]	59	98	0	2	0	0	1	0	160
[10:15-10:30]	74	67	4	1	0	1	1	0	148
[10:30-10:45]	86	86	1	1	1	0	1	0	176
[10:45-11:00]	85	86	2	2	0	0	1	0	176
	304	337	7	6	1	1	4	0	660
[11:00-11:15]	73	81	3	3	0	0	0	0	160
[11:15-11:30]	101	97	3	0	0	0	1	0	202
[11:30-11:45]	82	100	2	2	0	1	0	0	187
[11:45-12:00]	107	102	1	4	0	0	1	0	215
	363	380	9	9	0	1	2	0	764
[12:00-12:15]	92	102	0	1	0	0	0	0	195
[12:15-12:30]	106	121	1	2	0	0	1	0	231
[12:30-12:45]	98	102	2	1	1	0	0	0	204
[12:45-13:00]	98	83	0	4	0	0	1	0	186
	394	408	3	8	1	0	2	0	816
[13:00-13:15]	113	100	3	1	0	1	1	0	219
[13:15-13:30]	129	91	3	1	1	0	1	0	226
[13:30-13:45]	102	99	1	4	0	0	0	0	206
[13:45-14:00]	105	101	0	1	0	1	1	0	209
	449	391	7	7	1	2	3	0	860
[14:00-14:15]	113	110	1	2	0	0	0	0	226
[14:15-14:30]	82	123	0	1	3	0	1	0	210
[14:30-14:45]	97	108	0	2	2	0	0	0	209
[14:45-15:00]	118	101	0	1	2	0	1	0	223
	410	442	1	6	7	0	2	0	868

Time/Class Report

Device ID: 405077	**Location:** 7908			**Raw Count:** 11,871	
Operator: MD	**Lane:** WB			**AADT Count:** 11,871	
Begin: 08-31-2021 12:00 AM	**Street:** 610306 - WB			**AADT Factor:** 1	
End: 09-01-2021 12:00 AM	**City:** Niagara Region			**Speed Limit:** 50	
Hours: 24.00	**County:**				
Period (min): 15	**State:** ON				

Date And Time Range	< to 15	16 to 25	26 to 32	33 to 42	43 to 51	52 to 61	62 to 71	72 to >	Total
Tue,08-31-2021									
[15:00-15:15]	99	94	0	3	1	0	0	0	197
[15:15-15:30]	100	115	1	2	1	1	1	0	221
[15:30-15:45]	109	110	1	2	0	0	0	0	222
[15:45-16:00]	102	125	1	2	0	0	2	0	232
	410	444	3	9	2	1	3	0	872
[16:00-16:15]	116	106	0	0	0	0	0	0	222
[16:15-16:30]	121	103	0	1	1	0	1	0	227
[16:30-16:45]	93	110	2	1	0	0	0	0	206
[16:45-17:00]	107	100	0	2	0	0	1	0	210
	437	419	2	4	1	0	2	0	865
[17:00-17:15]	128	99	0	0	0	0	0	0	227
[17:15-17:30]	120	121	2	2	0	0	1	0	246
[17:30-17:45]	88	118	0	1	2	0	0	0	209
[17:45-18:00]	96	101	0	1	0	0	1	0	199
	432	439	2	4	2	0	2	0	881
[18:00-18:15]	88	108	1	0	0	0	0	0	197
[18:15-18:30]	102	86	0	1	0	0	1	0	190
[18:30-18:45]	97	81	1	0	0	0	0	0	179
[18:45-19:00]	89	85	0	2	0	0	1	0	177
	376	360	2	3	0	0	2	0	743
[19:00-19:15]	88	88	1	2	0	0	0	0	179
[19:15-19:30]	79	86	0	2	0	0	1	0	168
[19:30-19:45]	79	82	0	0	0	0	0	0	161
[19:45-20:00]	91	78	0	0	0	0	1	0	170
	337	334	1	4	0	0	2	0	678
[20:00-20:15]	84	94	0	0	0	0	0	0	178
[20:15-20:30]	81	88	0	0	0	0	1	0	170
[20:30-20:45]	78	91	0	1	1	0	0	0	171
[20:45-21:00]	89	67	2	0	0	0	1	0	159
	332	340	2	1	1	0	2	0	678
[21:00-21:15]	80	90	0	0	0	0	0	0	170
[21:15-21:30]	54	64	0	0	1	0	1	0	120
[21:30-21:45]	55	68	0	0	0	0	0	0	123
[21:45-22:00]	58	54	0	0	0	0	1	0	113
	247	276	0	0	1	0	2	0	526
[22:00-22:15]	49	60	0	0	0	0	0	0	109
[22:15-22:30]	56	62	0	1	0	0	1	0	120
[22:30-22:45]	51	58	0	0	0	0	0	0	109

Time/Class Report

Device ID: 405077	**Location:** 7908			**Raw Count:** 11,871	
Operator: MD	**Lane:** WB			**AADT Count:** 11,871	
Begin: 08-31-2021 12:00 AM	**Street:** 610306 - WB			**AADT Factor:** 1	
End: 09-01-2021 12:00 AM	**City:** Niagara Region			**Speed Limit:** 50	
Hours: 24.00	**County:**				
Period (min): 15	**State:** ON				

Date And Time Range	< to 15	16 to 25	26 to 32	33 to 42	43 to 51	52 to 61	62 to 71	72 to >	Total
Tue,08-31-2021									
[22:45-23:00]	45	47	0	0	0	0	1	0	93
	201	227	0	1	0	0	2	0	431
[23:00-23:15]	50	43	2	1	0	0	0	0	96
[23:15-23:30]	32	27	0	0	0	0	0	0	59
[23:30-23:45]	34	39	1	0	0	0	0	0	74
[23:45-00:00]	29	21	1	0	0	0	0	0	51
	145	130	4	1	0	0	0	0	280
08-31-2021 12:00 AM									
09-01-2021 12:00 AM	5681	5943	55	83	25	6	37	1	11831

Highway	Location Description From	Location Description To	Dist. (KM)	2019 AADT
QEW	FORT ERIE GODERICH ST PEACE BRIDGE PLAZA	CENTRAL AV IC	0.2	14000
QEW	CENTRAL AV IC	CONCESSION RD IC-1	0.9	18800
QEW	CONCESSION RD IC-1	THOMPSON RD IC-2	1.0	19100
QEW	THOMPSON RD IC-2	GILMORE RD IC-5	2.5	21500
QEW	GILMORE RD IC-5	BOWEN RD IC-7	2.1	24900
QEW	BOWEN RD IC-7	NETHERBY RD IC-12 NIAGARA FALLS LTS	5.5	26600
QEW	NETHERBY RD IC-12 NIAGARA FALLS LTS	SODOM RD IC-16	3.3	22400
QEW	SODOM RD IC-16	LYONS CREEK RD IC-21	6.6	31300
QEW	LYONS CREEK RD IC-21	MCLEOD RD IC-27	4.5	34400
QEW	MCLEOD RD IC-27	HWY 420 IC-30	3.0	47500
QEW	HWY 420 IC-30	THOROLD STONE RD IC-32	2.0	74000
QEW	THOROLD STONE RD IC-32	MOUNTAIN RD IC-34	2.5	70700
QEW	MOUNTAIN RD IC-34	HWY 405(WBL) IC-37	2.5	72200
QEW	HWY 405(WBL) IC-37	GLENDALE AV IC-38	1.3	91300
QEW	GLENDALE AV IC-38	NIAGARA ST SERVICE RDS	4.9	94000
QEW	NIAGARA ST SERVICE RDS	NIAGARA ST IC-44	1.2	83100
QEW	NIAGARA ST IC-44	LAKE ST IC-46	1.7	84600
QEW	LAKE ST IC-46	ONTARIO ST IC-47	1.3	124900
QEW	ONTARIO ST IC-47	MARTINDALE RD IC-48	0.8	102200
QEW	MARTINDALE RD IC-48	HWY 406 IC-49	0.7	76800
QEW	HWY 406 IC-49	SEVENTH ST IC-51	2.0	101100
QEW	SEVENTH ST IC-51	JORDAN RD IC-55	4.3	102400
QEW	JORDAN RD IC-55	VICTORIA AV IC-57	2.9	109300
QEW	VICTORIA AV IC-57	ONTARIO ST IC-64	6.7	110800
QEW	ONTARIO ST IC-64	BARTLETT AV IC-68	3.8	104700
QEW	BARTLETT AV IC-68	MAPLE AV IC-71	2.5	103800
QEW	MAPLE AV IC-71	CASABLANCA BV IC-74	3.6	113900
QEW	CASABLANCA BV IC-74	FIFTY RD IC-78	3.6	119500
QEW	FIFTY RD IC-78	FRUITLAND RD IC-83	5.1	127300
QEW	FRUITLAND RD IC-83	HAMILTON 20 IC-88 CENTENNIAL PKWY	5.2	124200
QEW	HAMILTON 20 IC-88 CENTENNIAL PKWY	NIKOLA TESLA BLVD IC-89	1.7	124400
QEW	NIKOLA TESLA BLVD IC-89	EASTPORT RD IC-93 (HWY 7189)	4.0	147300
QEW	EASTPORT RD IC-93 (HWY 7189)	HAMILTON HARBOUR ENTRANCE	0.9	155700
QEW	HAMILTON HARBOUR ENTRANCE	NORTH SHORE BLVD IC-97	2.4	162900

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 17:00:20
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: aeast.te Time Period: Day/Night 16/8 hours
Description: Building A East Facade Floor 1

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

Car traffic volume : 22572/2508 veh/TimePeriod *
Medium truck volume : 557/62 veh/TimePeriod *
Heavy truck volume : 371/41 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16890
Percentage of Annual Growth : 2.00
Number of Years of Growth : 22.00
Medium Truck % of Total Volume : 2.37
Heavy Truck % of Total Volume : 1.58
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Lundys Lane (day/night)

Angle1 Angle2 : 0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 20.00 / 20.00 m
Receiver height : 2.00 / 2.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Lundys Lane (day)

Source height = 1.12 m

ROAD (0.00 + 63.12 + 0.00) = 63.12 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	67.38	0.00	-1.25	-3.01	0.00	0.00	0.00	63.12

Segment Leq : 63.12 dBA

Total Leq All Segments: 63.12 dBA

Results segment # 1: Lundys Lane (night)

Source height = 1.12 m

ROAD (0.00 + 56.58 + 0.00) = 56.58 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	60.84	0.00	-1.25	-3.01	0.00	0.00	0.00	56.58

Segment Leq : 56.58 dBA

Total Leq All Segments: 56.58 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 63.12
(NIGHT): 56.58

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 17:00:39
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: a2east.te Time Period: Day/Night 16/8 hours
Description: Building A East Facade Floor 2

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

Car traffic volume : 22572/2508 veh/TimePeriod *
Medium truck volume : 557/62 veh/TimePeriod *
Heavy truck volume : 371/41 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16890
Percentage of Annual Growth : 2.00
Number of Years of Growth : 22.00
Medium Truck % of Total Volume : 2.37
Heavy Truck % of Total Volume : 1.58
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Lundys Lane (day/night)

Angle1 Angle2 : 0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 20.00 / 20.00 m
Receiver height : 5.00 / 5.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Lundys Lane (day)

Source height = 1.12 m

ROAD (0.00 + 63.12 + 0.00) = 63.12 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	67.38	0.00	-1.25	-3.01	0.00	0.00	0.00	63.12

Segment Leq : 63.12 dBA

Total Leq All Segments: 63.12 dBA

Results segment # 1: Lundys Lane (night)

Source height = 1.12 m

ROAD (0.00 + 56.58 + 0.00) = 56.58 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	60.84	0.00	-1.25	-3.01	0.00	0.00	0.00	56.58

Segment Leq : 56.58 dBA

Total Leq All Segments: 56.58 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 63.12
(NIGHT): 56.58

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 17:00:53
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: a3east.te Time Period: Day/Night 16/8 hours
Description: Building A East Facade Floor 3

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

Car traffic volume : 22572/2508 veh/TimePeriod *
Medium truck volume : 557/62 veh/TimePeriod *
Heavy truck volume : 371/41 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16890
Percentage of Annual Growth : 2.00
Number of Years of Growth : 22.00
Medium Truck % of Total Volume : 2.37
Heavy Truck % of Total Volume : 1.58
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Lundys Lane (day/night)

Angle1 Angle2 : 0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 20.00 / 20.00 m
Receiver height : 8.00 / 8.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Lundys Lane (day)

Source height = 1.12 m

ROAD (0.00 + 63.12 + 0.00) = 63.12 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	67.38	0.00	-1.25	-3.01	0.00	0.00	0.00	63.12

Segment Leq : 63.12 dBA

Total Leq All Segments: 63.12 dBA

Results segment # 1: Lundys Lane (night)

Source height = 1.12 m

ROAD (0.00 + 56.58 + 0.00) = 56.58 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	60.84	0.00	-1.25	-3.01	0.00	0.00	0.00	56.58

Segment Leq : 56.58 dBA

Total Leq All Segments: 56.58 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 63.12
(NIGHT): 56.58

STAMSON 5.0 SUMMARY REPORT Date: 08-09-2023 17:53:34
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: anorth.te Time Period: Day/Night 16/8 hours
Description: Building A North Facade Floor 1

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 23750
Percentage of Annual Growth : 2.00
Number of Years of Growth : 24.00
Medium Truck % of Total Volume : 5.00
Heavy Truck % of Total Volume : 15.00
Day (16 hrs) % of Total Volume : 66.67

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

Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 36.00 / 36.00 m
Receiver height : 2.00 / 2.00 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 0.00 deg
Barrier height : 3.00 m
Elevation : 10.00 m
Barrier receiver distance : 2.55 / 2.55 m
Source elevation : -10.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h

```
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  23750
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 2: QEW SBound (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  56.00 / 56.00  m
Receiver height           :   2.00 / 2.00   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 0.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :   2.55 / 2.55   m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Result summary (day)
--------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.QEW Nbound       !     1.97 !    60.90 !    60.90
 2.QEW SBound       !     1.97 !    59.97 !    59.97
--------------------+----------+----------+----------
                      Total                   63.47 dBA


Result summary (night)
----------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
```

1.QEW Nbound	1.97	60.90	60.90
2.QEW SBound	1.97	59.97	59.97
Total			63.47 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 63.47
(NIGHT): 63.47

STAMSON 5.0 SUMMARY REPORT Date: 08-09-2023 17:50:51
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: a2north.te Time Period: Day/Night 16/8 hours
Description: Building A North Facade Floor 2

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 23750
Percentage of Annual Growth : 2.00
Number of Years of Growth : 24.00
Medium Truck % of Total Volume : 5.00
Heavy Truck % of Total Volume : 15.00
Day (16 hrs) % of Total Volume : 66.67

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

Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 36.00 / 36.00 m
Receiver height : 5.00 / 5.00 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 0.00 deg
Barrier height : 3.00 m
Elevation : 10.00 m
Barrier receiver distance : 2.55 / 2.55 m
Source elevation : -10.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h

```
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  23750
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 2: QEW SBound (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  56.00 / 56.00  m
Receiver height           :   5.00 / 5.00   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 0.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :   2.55 / 2.55   m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Result summary (day)
--------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.QEW Nbound       !     1.97 !    72.78 !    72.78 *
 2.QEW SBound       !     1.97 !    70.86 !    70.86 *
--------------------+----------+----------+----------
                      Total                   74.94 dBA

  * Bright Zone  !


Result summary (night)
----------------------

                    !  source  !   Road   !  Total
```

	height (m)	Leq (dBA)	Leq (dBA)	
1.QEW Nbound	1.97	72.78	72.78	*
2.QEW SBound	1.97	70.86	70.86	*
Total			74.94	dBA

* Bright Zone !

TOTAL Leq FROM ALL SOURCES (DAY): 74.94
(NIGHT): 74.94

STAMSON 5.0 SUMMARY REPORT Date: 08-09-2023 17:51:53
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: a3north.te Time Period: Day/Night 16/8 hours
Description: Building A North Facade Floor 3

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 23750
Percentage of Annual Growth : 2.00
Number of Years of Growth : 24.00
Medium Truck % of Total Volume : 5.00
Heavy Truck % of Total Volume : 15.00
Day (16 hrs) % of Total Volume : 66.67

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

Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 36.00 / 36.00 m
Receiver height : 8.00 / 8.00 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 0.00 deg
Barrier height : 3.00 m
Elevation : 10.00 m
Barrier receiver distance : 2.55 / 2.55 m
Source elevation : -10.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h

```
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  23750
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 2: QEW SBound (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  56.00 / 56.00  m
Receiver height           :   8.00 / 8.00   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 0.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :   2.55 / 2.55   m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Result summary (day)
--------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.QEW Nbound       !     1.97 !    72.78 !    72.78 *
 2.QEW SBound       !     1.97 !    70.86 !    70.86 *
--------------------+----------+----------+----------
                      Total                   74.94 dBA

  * Bright Zone  !


Result summary (night)
----------------------

                    !  source  !   Road   !  Total
```

	height (m)	Leq (dBA)	Leq (dBA)	
1.QEW Nbound	1.97	72.78	72.78	*
2.QEW SBound	1.97	70.86	70.86	*
Total			74.94	dBA

* Bright Zone !

TOTAL Leq FROM ALL SOURCES (DAY): 74.94
(NIGHT): 74.94

STAMSON 5.0 SUMMARY REPORT Date: 08-09-2023 17:54:48
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: asouth.te Time Period: Day/Night 16/8 hours
Description: Building A South Facade Floor 1

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

Car traffic volume : 22572/2508 veh/TimePeriod *
Medium truck volume : 557/62 veh/TimePeriod *
Heavy truck volume : 371/41 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16890
Percentage of Annual Growth : 2.00
Number of Years of Growth : 22.00
Medium Truck % of Total Volume : 2.37
Heavy Truck % of Total Volume : 1.58
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Lundys Lane (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 15.00 / 15.00 m
Receiver height : 2.00 / 2.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 23750
Percentage of Annual Growth : 2.00

```
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 2: QEW NBound (day/night)
---------------------------------------------
Angle1   Angle2           :   0.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  58.00 / 58.00  m
Receiver height           :   2.00 / 2.00   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :   0.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :  26.95 / 26.95  m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Road data, segment # 3: QEW Sbound (day/night)
---------------------------------------------
Car traffic volume  : 20375/10186 veh/TimePeriod  *
Medium truck volume :  1273/637   veh/TimePeriod  *
Heavy truck volume  :  3820/1910  veh/TimePeriod  *
Posted speed limit  :   100 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  23750
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 3: QEW Sbound (day/night)
---------------------------------------------
Angle1   Angle2           :   0.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  78.00 / 78.00  m
Receiver height           :   2.00 / 2.00   m
```

```
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :   0.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :  26.95 / 26.95  m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00
```

Result summary (day)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Lundys Lane	1.12	67.38	67.38
2.QEW NBound	1.97	56.97	56.97
3.QEW Sbound	1.97	57.73	57.73
Total			68.17 dBA

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Lundys Lane	1.12	60.84	60.84
2.QEW NBound	1.97	56.97	56.97
3.QEW Sbound	1.97	57.73	57.73
Total			63.62 dBA

```
TOTAL Leq FROM ALL SOURCES (DAY): 68.17
                           (NIGHT): 63.62
```

STAMSON 5.0 SUMMARY REPORT Date: 08-09-2023 17:56:10
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: a2south.te Time Period: Day/Night 16/8 hours
Description: Building A South Facade Floor 2

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

Car traffic volume : 22572/2508 veh/TimePeriod *
Medium truck volume : 557/62 veh/TimePeriod *
Heavy truck volume : 371/41 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16890
Percentage of Annual Growth : 2.00
Number of Years of Growth : 22.00
Medium Truck % of Total Volume : 2.37
Heavy Truck % of Total Volume : 1.58
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Lundys Lane (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 15.00 / 15.00 m
Receiver height : 5.00 / 5.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 23750
Percentage of Annual Growth : 2.00

```
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 2: QEW NBound (day/night)
---------------------------------------------
Angle1   Angle2           :   0.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  58.00 / 58.00  m
Receiver height           :   5.00 / 5.00   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :   0.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :  26.95 / 26.95  m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Road data, segment # 3: QEW Sbound (day/night)
---------------------------------------------
Car traffic volume  : 20375/10186 veh/TimePeriod  *
Medium truck volume :  1273/637   veh/TimePeriod  *
Heavy truck volume  :  3820/1910  veh/TimePeriod  *
Posted speed limit  :   100 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  23750
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 3: QEW Sbound (day/night)
---------------------------------------------
Angle1   Angle2           :   0.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  78.00 / 78.00  m
Receiver height           :   5.00 / 5.00   m
```

```
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :   0.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :  26.95 / 26.95  m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00
```

Result summary (day)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Lundys Lane	1.12	67.38	67.38
2.QEW NBound	1.97	59.16	59.16
3.QEW Sbound	1.97	60.90	60.90
Total			68.76 dBA

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Lundys Lane	1.12	60.84	60.84
2.QEW NBound	1.97	59.16	59.16
3.QEW Sbound	1.97	60.90	60.90
Total			65.14 dBA

```
TOTAL Leq FROM ALL SOURCES (DAY): 68.76
                           (NIGHT): 65.14
```

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 17:02:44
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: a3south.te Time Period: Day/Night 16/8 hours
Description: Building A South Facade Floor 3

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

Car traffic volume : 22572/2508 veh/TimePeriod *
Medium truck volume : 557/62 veh/TimePeriod *
Heavy truck volume : 371/41 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16890
Percentage of Annual Growth : 2.00
Number of Years of Growth : 22.00
Medium Truck % of Total Volume : 2.37
Heavy Truck % of Total Volume : 1.58
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Lundys Lane (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 15.00 / 15.00 m
Receiver height : 8.00 / 8.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 23750
Percentage of Annual Growth : 2.00

```
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 2: QEW NBound (day/night)
---------------------------------------------
Angle1   Angle2           :   0.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  58.00 / 58.00  m
Receiver height           :   8.00 / 8.00   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :   0.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :  26.95 / 26.95  m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Road data, segment # 3: QEW Sbound (day/night)
---------------------------------------------
Car traffic volume  : 20375/10186 veh/TimePeriod  *
Medium truck volume :  1273/637   veh/TimePeriod  *
Heavy truck volume  :  3820/1910  veh/TimePeriod  *
Posted speed limit  :   100 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  23750
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 3: QEW Sbound (day/night)
---------------------------------------------
Angle1   Angle2           :   0.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  78.00 / 78.00  m
Receiver height           :   8.00 / 8.00   m
```

```
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :   0.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :  26.95 / 26.95  m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Results segment # 1: Lundys Lane (day)
--------------------------------------

Source height = 1.12 m

ROAD (0.00 + 67.38 + 0.00) = 67.38 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.00  67.38   0.00   0.00   0.00   0.00   0.00   0.00  67.38
-------------------------------------------------------------------------------

Segment Leq : 67.38 dBA


Results segment # 2: QEW NBound (day)
-------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        8.00 !        0.55 !         0.55

ROAD (0.00 + 61.99 + 0.00) = 61.99 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     90   0.00  79.60   0.00  -5.87  -3.01   0.00   0.00  -8.72  61.99
-------------------------------------------------------------------------------

Segment Leq : 61.99 dBA


Results segment # 3: QEW Sbound (day)
-------------------------------------

Source height = 1.97 m
```

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	8.00	2.46	2.46

ROAD (0.00 + 64.17 + 0.00) = 64.17 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	79.60	0.00	-7.16	-3.01	0.00	0.00	-5.25	64.17

Segment Leq : 64.17 dBA

Total Leq All Segments: 69.85 dBA

Results segment # 1: Lundys Lane (night)

Source height = 1.12 m

ROAD (0.00 + 60.84 + 0.00) = 60.84 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	60.84	0.00	0.00	0.00	0.00	0.00	0.00	60.84

Segment Leq : 60.84 dBA

Results segment # 2: QEW NBound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	8.00	0.55	0.55

ROAD (0.00 + 61.99 + 0.00) = 61.99 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	79.60	0.00	-5.87	-3.01	0.00	0.00	-8.72	61.99

Segment Leq : 61.99 dBA

Results segment # 3: QEW Sbound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	8.00	2.46	2.46

ROAD (0.00 + 64.17 + 0.00) = 64.17 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	79.60	0.00	-7.16	-3.01	0.00	0.00	-5.25	64.17

Segment Leq : 64.17 dBA

Total Leq All Segments: 67.33 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 69.85
(NIGHT): 67.33

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 17:03:02
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: awest.te Time Period: Day/Night 16/8 hours
Description: Building A West Facade Floor 1

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

Car traffic volume : 21696/2411 veh/TimePeriod *
Medium truck volume : 535/59 veh/TimePeriod *
Heavy truck volume : 357/40 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16890
Percentage of Annual Growth : 2.00
Number of Years of Growth : 20.00
Medium Truck % of Total Volume : 2.37
Heavy Truck % of Total Volume : 1.58
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Lundys Lane (day/night)

Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 15.00 / 15.00 m
Receiver height : 2.00 / 2.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 23750
Percentage of Annual Growth : 2.00

```
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 2: QEW NBound (day/night)
---------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  36.00 / 36.00  m
Receiver height           :   2.00 / 2.00   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :   2.55 / 20.00  m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Road data, segment # 3: QEW Sbound (day/night)
---------------------------------------------
Car traffic volume  : 20375/10186 veh/TimePeriod  *
Medium truck volume :  1273/637   veh/TimePeriod  *
Heavy truck volume  :  3820/1910  veh/TimePeriod  *
Posted speed limit  :   100 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  23750
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 3: QEW Sbound (day/night)
---------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  56.00 / 56.00  m
Receiver height           :   2.00 / 2.00   m
```

```
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :   2.55 / 2.55   m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Results segment # 1: Lundys Lane (day)
--------------------------------------

Source height = 1.12 m

ROAD (0.00 + 64.20 + 0.00) = 64.20 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90      0   0.00  67.21   0.00   0.00  -3.01   0.00   0.00   0.00  64.20
-------------------------------------------------------------------------------

Segment Leq : 64.20 dBA


Results segment # 2: QEW NBound (day)
-------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        2.00 !        1.29 !         1.29

ROAD (0.00 + 63.91 + 0.00) = 63.91 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.00  79.60   0.00  -3.80   0.00   0.00   0.00 -11.89  63.91
-------------------------------------------------------------------------------

Segment Leq : 63.91 dBA


Results segment # 3: QEW Sbound (day)
-------------------------------------

Source height = 1.97 m
```

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	2.00	1.54	1.54

ROAD (0.00 + 62.98 + 0.00) = 62.98 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	79.60	0.00	-5.72	0.00	0.00	0.00	-10.90	62.98

Segment Leq : 62.98 dBA

Total Leq All Segments: 68.50 dBA

Results segment # 1: Lundys Lane (night)

Source height = 1.12 m

ROAD (0.00 + 57.68 + 0.00) = 57.68 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	60.69	0.00	0.00	-3.01	0.00	0.00	0.00	57.68

Segment Leq : 57.68 dBA

Results segment # 2: QEW NBound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	2.00	-3.57	-3.57

ROAD (0.00 + 59.85 + 0.00) = 59.85 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	79.60	0.00	-3.80	0.00	0.00	0.00	-15.94	59.85

Segment Leq : 59.85 dBA

Results segment # 3: QEW Sbound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	2.00	1.54	1.54

ROAD (0.00 + 62.98 + 0.00) = 62.98 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	79.60	0.00	-5.72	0.00	0.00	0.00	-10.90	62.98

Segment Leq : 62.98 dBA

Total Leq All Segments: 65.49 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 68.50
(NIGHT): 65.49

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 17:03:15
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: a2west.te Time Period: Day/Night 16/8 hours
Description: Building A West Facade Floor 2

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

Car traffic volume : 21696/2411 veh/TimePeriod *
Medium truck volume : 535/59 veh/TimePeriod *
Heavy truck volume : 357/40 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16890
Percentage of Annual Growth : 2.00
Number of Years of Growth : 20.00
Medium Truck % of Total Volume : 2.37
Heavy Truck % of Total Volume : 1.58
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Lundys Lane (day/night)

Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 15.00 / 15.00 m
Receiver height : 5.00 / 5.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 23750
Percentage of Annual Growth : 2.00

```
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 2: QEW NBound (day/night)
---------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  36.00 / 36.00  m
Receiver height           :   5.00 / 5.00   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :   2.55 / 2.55   m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Road data, segment # 3: QEW Sbound (day/night)
---------------------------------------------
Car traffic volume  : 20375/10186 veh/TimePeriod  *
Medium truck volume :  1273/637   veh/TimePeriod  *
Heavy truck volume  :  3820/1910  veh/TimePeriod  *
Posted speed limit  :   100 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  23750
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 3: QEW Sbound (day/night)
---------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  56.00 / 56.00  m
Receiver height           :   5.00 / 5.00   m
```

```
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :   2.55 / 2.55   m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Results segment # 1: Lundys Lane (day)
--------------------------------------

Source height = 1.12 m

ROAD (0.00 + 64.20 + 0.00) = 64.20 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90      0   0.00  67.21   0.00   0.00  -3.01   0.00   0.00   0.00  64.20
-------------------------------------------------------------------------------

Segment Leq : 64.20 dBA


Results segment # 2: QEW NBound (day)
-------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        5.00 !        4.08 !         4.08

ROAD (0.00 + 75.79 + 0.00) = 75.79 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.00  79.60   0.00  -3.80   0.00   0.00   0.00  -0.49  75.30*
   -90     90   0.00  79.60   0.00  -3.80   0.00   0.00   0.00   0.00  75.79
-------------------------------------------------------------------------------

 * Bright Zone !

Segment Leq : 75.79 dBA


Results segment # 3: QEW Sbound (day)
```

```
-------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
-----------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        5.00 !        4.41 !         4.41

ROAD (0.00 + 73.87 + 0.00) = 73.87 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.00  79.60   0.00  -5.72   0.00   0.00   0.00  -0.26  73.61*
   -90     90   0.00  79.60   0.00  -5.72   0.00   0.00   0.00   0.00  73.87
-------------------------------------------------------------------------------

 * Bright Zone !

Segment Leq : 73.87 dBA

Total Leq All Segments: 78.13 dBA


Results segment # 1: Lundys Lane (night)
---------------------------------------

Source height = 1.12 m

ROAD (0.00 + 57.68 + 0.00) = 57.68 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90      0   0.00  60.69   0.00   0.00  -3.01   0.00   0.00   0.00  57.68
-------------------------------------------------------------------------------

Segment Leq : 57.68 dBA


Results segment # 2: QEW NBound (night)
---------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
-----------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        5.00 !        4.08 !         4.08
```

ROAD (0.00 + 75.79 + 0.00) = 75.79 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	79.60	0.00	-3.80	0.00	0.00	0.00	-0.49	75.30*
-90	90	0.00	79.60	0.00	-3.80	0.00	0.00	0.00	0.00	75.79

* Bright Zone !

Segment Leq : 75.79 dBA

Results segment # 3: QEW Sbound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	5.00	4.41	4.41

ROAD (0.00 + 73.87 + 0.00) = 73.87 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	79.60	0.00	-5.72	0.00	0.00	0.00	-0.26	73.61*
-90	90	0.00	79.60	0.00	-5.72	0.00	0.00	0.00	0.00	73.87

* Bright Zone !

Segment Leq : 73.87 dBA

Total Leq All Segments: 77.99 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 78.13
(NIGHT): 77.99

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 17:03:31
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: a3west.te Time Period: Day/Night 16/8 hours
Description: Building A West Facade Floor 3

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

Car traffic volume : 21696/2411 veh/TimePeriod *
Medium truck volume : 535/59 veh/TimePeriod *
Heavy truck volume : 357/40 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16890
Percentage of Annual Growth : 2.00
Number of Years of Growth : 20.00
Medium Truck % of Total Volume : 2.37
Heavy Truck % of Total Volume : 1.58
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Lundys Lane (day/night)

Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 15.00 / 15.00 m
Receiver height : 8.00 / 8.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 23750
Percentage of Annual Growth : 2.00

```
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 2: QEW NBound (day/night)
---------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  36.00 / 36.00  m
Receiver height           :   8.00 / 8.00   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :   2.55 / 2.55   m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Road data, segment # 3: QEW Sbound (day/night)
---------------------------------------------
Car traffic volume  : 20375/10186 veh/TimePeriod  *
Medium truck volume :  1273/637   veh/TimePeriod  *
Heavy truck volume  :  3820/1910  veh/TimePeriod  *
Posted speed limit  :   100 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  23750
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 3: QEW Sbound (day/night)
---------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  56.00 / 56.00  m
Receiver height           :   8.00 / 8.00   m
```

```
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :   2.55 / 2.55   m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Results segment # 1: Lundys Lane (day)
--------------------------------------

Source height = 1.12 m

ROAD (0.00 + 64.20 + 0.00) = 64.20 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90      0   0.00  67.21   0.00   0.00  -3.01   0.00   0.00   0.00  64.20
-------------------------------------------------------------------------------

Segment Leq : 64.20 dBA


Results segment # 2: QEW NBound (day)
-------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        8.00 !        6.86 !         6.86

ROAD (0.00 + 75.79 + 0.00) = 75.79 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.00  79.60   0.00  -3.80   0.00   0.00   0.00  -0.06  75.74*
   -90     90   0.00  79.60   0.00  -3.80   0.00   0.00   0.00   0.00  75.79
-------------------------------------------------------------------------------

 * Bright Zone !

Segment Leq : 75.79 dBA


Results segment # 3: QEW Sbound (day)
```

```
------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        8.00 !        7.27 !         7.27

ROAD (0.00 + 73.87 + 0.00) = 73.87 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.00  79.60   0.00  -5.72   0.00   0.00   0.00  -0.04  73.83*
   -90     90   0.00  79.60   0.00  -5.72   0.00   0.00   0.00   0.00  73.87
-------------------------------------------------------------------------------

 * Bright Zone !

Segment Leq : 73.87 dBA

Total Leq All Segments: 78.13 dBA


Results segment # 1: Lundys Lane (night)
----------------------------------------

Source height = 1.12 m

ROAD (0.00 + 57.68 + 0.00) = 57.68 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90      0   0.00  60.69   0.00   0.00  -3.01   0.00   0.00   0.00  57.68
-------------------------------------------------------------------------------

Segment Leq : 57.68 dBA


Results segment # 2: QEW NBound (night)
---------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        8.00 !        6.86 !         6.86
```

ROAD (0.00 + 75.79 + 0.00) = 75.79 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	79.60	0.00	-3.80	0.00	0.00	0.00	-0.06	75.74*
-90	90	0.00	79.60	0.00	-3.80	0.00	0.00	0.00	0.00	75.79

 * Bright Zone !

Segment Leq : 75.79 dBA

Results segment # 3: QEW Sbound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	8.00	7.27	7.27

ROAD (0.00 + 73.87 + 0.00) = 73.87 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	79.60	0.00	-5.72	0.00	0.00	0.00	-0.04	73.83*
-90	90	0.00	79.60	0.00	-5.72	0.00	0.00	0.00	0.00	73.87

 * Bright Zone !

Segment Leq : 73.87 dBA

Total Leq All Segments: 77.99 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 78.13
(NIGHT): 77.99

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 17:03:57
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: beast.te Time Period: Day/Night 16/8 hours
Description: Building B East Facade Floor 1

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

Car traffic volume : 22572/2508 veh/TimePeriod *
Medium truck volume : 557/62 veh/TimePeriod *
Heavy truck volume : 371/41 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16890
Percentage of Annual Growth : 2.00
Number of Years of Growth : 22.00
Medium Truck % of Total Volume : 2.37
Heavy Truck % of Total Volume : 1.58
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Lundys Lane (day/night)

Angle1 Angle2 : 0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 42.00 / 42.00 m
Receiver height : 2.00 / 2.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Lundys Lane (day)

Source height = 1.12 m

ROAD (0.00 + 59.90 + 0.00) = 59.90 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	67.38	0.00	-4.47	-3.01	0.00	0.00	0.00	59.90

Segment Leq : 59.90 dBA

Total Leq All Segments: 59.90 dBA

Results segment # 1: Lundys Lane (night)

Source height = 1.12 m

ROAD (0.00 + 53.36 + 0.00) = 53.36 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	60.84	0.00	-4.47	-3.01	0.00	0.00	0.00	53.36

Segment Leq : 53.36 dBA

Total Leq All Segments: 53.36 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 59.90
(NIGHT): 53.36

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 17:04:14
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

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

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

Car traffic volume : 22572/2508 veh/TimePeriod *
Medium truck volume : 557/62 veh/TimePeriod *
Heavy truck volume : 371/41 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16890
Percentage of Annual Growth : 2.00
Number of Years of Growth : 22.00
Medium Truck % of Total Volume : 2.37
Heavy Truck % of Total Volume : 1.58
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Lundys Lane (day/night)

Angle1 Angle2 : 0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 42.00 / 42.00 m
Receiver height : 5.00 / 5.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Lundys Lane (day)

Source height = 1.12 m

ROAD (0.00 + 59.90 + 0.00) = 59.90 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	67.38	0.00	-4.47	-3.01	0.00	0.00	0.00	59.90

Segment Leq : 59.90 dBA

Total Leq All Segments: 59.90 dBA

Results segment # 1: Lundys Lane (night)

Source height = 1.12 m

ROAD (0.00 + 53.36 + 0.00) = 53.36 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	60.84	0.00	-4.47	-3.01	0.00	0.00	0.00	53.36

Segment Leq : 53.36 dBA

Total Leq All Segments: 53.36 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 59.90
(NIGHT): 53.36

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 17:04:30
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: b3east.te Time Period: Day/Night 16/8 hours
Description: Building B East Facade Floor 3

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

Car traffic volume : 22572/2508 veh/TimePeriod *
Medium truck volume : 557/62 veh/TimePeriod *
Heavy truck volume : 371/41 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16890
Percentage of Annual Growth : 2.00
Number of Years of Growth : 22.00
Medium Truck % of Total Volume : 2.37
Heavy Truck % of Total Volume : 1.58
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Lundys Lane (day/night)

Angle1 Angle2 : 0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 42.00 / 42.00 m
Receiver height : 8.00 / 8.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Lundys Lane (day)

Source height = 1.12 m

ROAD (0.00 + 59.90 + 0.00) = 59.90 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	67.38	0.00	-4.47	-3.01	0.00	0.00	0.00	59.90

Segment Leq : 59.90 dBA

Total Leq All Segments: 59.90 dBA

Results segment # 1: Lundys Lane (night)

Source height = 1.12 m

ROAD (0.00 + 53.36 + 0.00) = 53.36 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	60.84	0.00	-4.47	-3.01	0.00	0.00	0.00	53.36

Segment Leq : 53.36 dBA

Total Leq All Segments: 53.36 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 59.90
(NIGHT): 53.36

STAMSON 5.0 SUMMARY REPORT Date: 08-09-2023 17:57:27
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: bnorth.te Time Period: Day/Night 16/8 hours
Description: Building B North Facade Floor 1

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 23750
Percentage of Annual Growth : 2.00
Number of Years of Growth : 24.00
Medium Truck % of Total Volume : 5.00
Heavy Truck % of Total Volume : 15.00
Day (16 hrs) % of Total Volume : 66.67

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

Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 38.00 / 38.00 m
Receiver height : 2.00 / 2.00 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 0.00 deg
Barrier height : 3.00 m
Elevation : 10.00 m
Barrier receiver distance : 4.50 / 4.50 m
Source elevation : -10.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h

```
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  23750
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 2: QEW SBound (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  58.00 / 58.00  m
Receiver height           :   2.00 / 2.00   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 0.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :   4.50 / 4.50   m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Result summary (day)
--------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.QEW Nbound       !     1.97 !    60.73 !    60.73
 2.QEW SBound       !     1.97 !    60.18 !    60.18
--------------------+----------+----------+----------
                      Total                   63.47 dBA


Result summary (night)
----------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
```

1.QEW Nbound	1.97	60.73	60.73
2.QEW SBound	1.97	60.18	60.18
Total			63.47 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 63.47
(NIGHT): 63.47

STAMSON 5.0 SUMMARY REPORT Date: 08-09-2023 17:58:07
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

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

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 23750
Percentage of Annual Growth : 2.00
Number of Years of Growth : 24.00
Medium Truck % of Total Volume : 5.00
Heavy Truck % of Total Volume : 15.00
Day (16 hrs) % of Total Volume : 66.67

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

Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 38.00 / 38.00 m
Receiver height : 5.00 / 5.00 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 0.00 deg
Barrier height : 3.00 m
Elevation : 10.00 m
Barrier receiver distance : 4.50 / 4.50 m
Source elevation : -10.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h

```
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  23750
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 2: QEW SBound (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  58.00 / 58.00  m
Receiver height           :   5.00 / 5.00   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 0.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :   4.50 / 4.50   m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Result summary (day)
--------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.QEW Nbound       !     1.97 !    72.55 !    72.55 *
 2.QEW SBound       !     1.97 !    70.71 !    70.71 *
--------------------+----------+----------+----------
                      Total                   74.74 dBA

  * Bright Zone  !


Result summary (night)
----------------------

                    !  source  !   Road   !  Total
```

	height (m)	Leq (dBA)	Leq (dBA)	
1.QEW Nbound	1.97	72.55	72.55	*
2.QEW SBound	1.97	70.71	70.71	*
Total			74.74	dBA

* Bright Zone !

TOTAL Leq FROM ALL SOURCES (DAY): 74.74
(NIGHT): 74.74

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 17:05:28
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: b3north.te Time Period: Day/Night 16/8 hours
Description: Building B North Facade Floor 3

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 23750
Percentage of Annual Growth : 2.00
Number of Years of Growth : 24.00
Medium Truck % of Total Volume : 5.00
Heavy Truck % of Total Volume : 15.00
Day (16 hrs) % of Total Volume : 66.67

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

Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 38.00 / 38.00 m
Receiver height : 8.00 / 8.00 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 0.00 deg
Barrier height : 3.00 m
Elevation : 10.00 m
Barrier receiver distance : 4.50 / 4.50 m
Source elevation : -10.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h

```
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  23750
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 2: QEW SBound (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  58.00 / 58.00  m
Receiver height           :   8.00 / 8.00   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 0.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :   4.50 / 4.50   m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


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

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        8.00 !        6.10 !         6.10

ROAD (0.00 + 72.55 + 0.00) = 72.55 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90      0   0.00  79.60   0.00  -4.04  -3.01   0.00   0.00  -0.11  72.44*
   -90      0   0.00  79.60   0.00  -4.04  -3.01   0.00   0.00   0.00  72.55
-------------------------------------------------------------------------------
```

 * Bright Zone !

Segment Leq : 72.55 dBA

Results segment # 2: QEW SBound (day)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	8.00	6.76	6.76

ROAD (0.00 + 70.71 + 0.00) = 70.71 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	79.60	0.00	-5.87	-3.01	0.00	0.00	-0.07	70.64*
-90	0	0.00	79.60	0.00	-5.87	-3.01	0.00	0.00	0.00	70.71

 * Bright Zone !

Segment Leq : 70.71 dBA

Total Leq All Segments: 74.74 dBA

Results segment # 1: QEW Nbound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	8.00	6.10	6.10

ROAD (0.00 + 72.55 + 0.00) = 72.55 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	79.60	0.00	-4.04	-3.01	0.00	0.00	-0.11	72.44*
-90	0	0.00	79.60	0.00	-4.04	-3.01	0.00	0.00	0.00	72.55

* Bright Zone !

Segment Leq : 72.55 dBA

Results segment # 2: QEW SBound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	8.00	6.76	6.76

ROAD (0.00 + 70.71 + 0.00) = 70.71 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	79.60	0.00	-5.87	-3.01	0.00	0.00	-0.07	70.64*
-90	0	0.00	79.60	0.00	-5.87	-3.01	0.00	0.00	0.00	70.71

* Bright Zone !

Segment Leq : 70.71 dBA

Total Leq All Segments: 74.74 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 74.74
(NIGHT): 74.74

STAMSON 5.0 SUMMARY REPORT Date: 08-09-2023 17:59:26
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: bsouth.te Time Period: Day/Night 16/8 hours
Description: Building B South Facade Floor 1

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

Car traffic volume : 22572/2508 veh/TimePeriod *
Medium truck volume : 557/62 veh/TimePeriod *
Heavy truck volume : 371/41 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16890
Percentage of Annual Growth : 2.00
Number of Years of Growth : 22.00
Medium Truck % of Total Volume : 2.37
Heavy Truck % of Total Volume : 1.58
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Lundys Lane (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 20.00 / 20.00 m
Receiver height : 2.00 / 2.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 23750
Percentage of Annual Growth : 2.00

```
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 2: QEW NBound (day/night)
---------------------------------------------
Angle1   Angle2           :   0.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  46.00 / 46.00  m
Receiver height           :   2.00 / 2.00   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :   0.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :  15.00 / 15.00  m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Road data, segment # 3: QEW Sbound (day/night)
---------------------------------------------
Car traffic volume  : 20375/10186 veh/TimePeriod  *
Medium truck volume :  1273/637   veh/TimePeriod  *
Heavy truck volume  :  3820/1910  veh/TimePeriod  *
Posted speed limit  :   100 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  23750
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 3: QEW Sbound (day/night)
---------------------------------------------
Angle1   Angle2           :   0.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  66.00 / 66.00  m
Receiver height           :   2.00 / 2.00   m
```

```
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :   0.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :  15.00 / 15.00  m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00
```

Result summary (day)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Lundys Lane	1.12	66.13	66.13
2.QEW NBound	1.97	58.66	58.66
3.QEW Sbound	1.97	59.05	59.05
Total			67.51 dBA

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Lundys Lane	1.12	59.59	59.59
2.QEW NBound	1.97	58.66	58.66
3.QEW Sbound	1.97	59.05	59.05
Total			63.89 dBA

```
TOTAL Leq FROM ALL SOURCES (DAY): 67.51
                           (NIGHT): 63.89
```

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 18:01:56
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: b2south.te Time Period: Day/Night 16/8 hours
Description: Building B South Facade Floor 2

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

Car traffic volume : 22572/2508 veh/TimePeriod *
Medium truck volume : 557/62 veh/TimePeriod *
Heavy truck volume : 371/41 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16890
Percentage of Annual Growth : 2.00
Number of Years of Growth : 22.00
Medium Truck % of Total Volume : 2.37
Heavy Truck % of Total Volume : 1.58
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Lundys Lane (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 20.00 / 20.00 m
Receiver height : 5.00 / 5.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 23750
Percentage of Annual Growth : 2.00

```
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 2: QEW NBound (day/night)
---------------------------------------------
Angle1   Angle2           :   0.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  46.00 / 46.00  m
Receiver height           :   5.00 / 5.00   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :   0.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :  15.00 / 15.00  m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Road data, segment # 3: QEW Sbound (day/night)
---------------------------------------------
Car traffic volume  : 20375/10186 veh/TimePeriod  *
Medium truck volume :  1273/637   veh/TimePeriod  *
Heavy truck volume  :  3820/1910  veh/TimePeriod  *
Posted speed limit  :   100 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  23750
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 3: QEW Sbound (day/night)
---------------------------------------------
Angle1   Angle2           :   0.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  66.00 / 66.00  m
Receiver height           :   5.00 / 5.00   m
```

```
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :   0.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :  15.00 / 15.00  m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Results segment # 1: Lundys Lane (day)
--------------------------------------

Source height = 1.12 m

ROAD (0.00 + 66.13 + 0.00) = 66.13 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.00  67.38   0.00  -1.25   0.00   0.00   0.00   0.00  66.13
-------------------------------------------------------------------------------

Segment Leq : 66.13 dBA


Results segment # 2: QEW NBound (day)
-------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        5.00 !        0.75 !         0.75

ROAD (0.00 + 62.52 + 0.00) = 62.52 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     90   0.00  79.60   0.00  -4.87  -3.01   0.00   0.00  -9.19  62.52
-------------------------------------------------------------------------------

Segment Leq : 62.52 dBA


Results segment # 3: QEW Sbound (day)
-------------------------------------

Source height = 1.97 m
```

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	5.00	2.04	2.04

ROAD (0.00 + 64.04 + 0.00) = 64.04 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	79.60	0.00	-6.43	-3.01	0.00	0.00	-6.11	64.04

Segment Leq : 64.04 dBA

Total Leq All Segments: 69.26 dBA

Results segment # 1: Lundys Lane (night)

Source height = 1.12 m

ROAD (0.00 + 59.59 + 0.00) = 59.59 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	60.84	0.00	-1.25	0.00	0.00	0.00	0.00	59.59

Segment Leq : 59.59 dBA

Results segment # 2: QEW NBound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	5.00	0.75	0.75

ROAD (0.00 + 62.52 + 0.00) = 62.52 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	79.60	0.00	-4.87	-3.01	0.00	0.00	-9.19	62.52

Segment Leq : 62.52 dBA

Results segment # 3: QEW Sbound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	5.00	2.04	2.04

ROAD (0.00 + 64.04 + 0.00) = 64.04 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	79.60	0.00	-6.43	-3.01	0.00	0.00	-6.11	64.04

Segment Leq : 64.04 dBA

Total Leq All Segments: 67.19 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 69.26
(NIGHT): 67.19

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 17:06:23
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: b3south.te Time Period: Day/Night 16/8 hours
Description: Building B South Facade Floor 3

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

Car traffic volume : 22572/2508 veh/TimePeriod *
Medium truck volume : 557/62 veh/TimePeriod *
Heavy truck volume : 371/41 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16890
Percentage of Annual Growth : 2.00
Number of Years of Growth : 22.00
Medium Truck % of Total Volume : 2.37
Heavy Truck % of Total Volume : 1.58
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Lundys Lane (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 20.00 / 20.00 m
Receiver height : 8.00 / 8.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 23750
Percentage of Annual Growth : 2.00

```
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 2: QEW NBound (day/night)
---------------------------------------------
Angle1   Angle2           :   0.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  46.00 / 46.00  m
Receiver height           :   8.00 / 8.00   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :   0.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :  15.00 / 15.00  m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Road data, segment # 3: QEW Sbound (day/night)
---------------------------------------------
Car traffic volume  : 20375/10186 veh/TimePeriod  *
Medium truck volume :  1273/637   veh/TimePeriod  *
Heavy truck volume  :  3820/1910  veh/TimePeriod  *
Posted speed limit  :   100 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  23750
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 3: QEW Sbound (day/night)
---------------------------------------------
Angle1   Angle2           :   0.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  66.00 / 66.00  m
Receiver height           :   8.00 / 8.00   m
```

```
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :   0.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :  15.00 / 15.00  m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Results segment # 1: Lundys Lane (day)
--------------------------------------

Source height = 1.12 m

ROAD (0.00 + 66.13 + 0.00) = 66.13 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.00  67.38   0.00  -1.25   0.00   0.00   0.00   0.00  66.13
-------------------------------------------------------------------------------

Segment Leq : 66.13 dBA


Results segment # 2: QEW NBound (day)
-------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        8.00 !        2.77 !         2.77

ROAD (0.00 + 66.65 + 0.00) = 66.65 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     90   0.00  79.60   0.00  -4.87  -3.01   0.00   0.00  -5.07  66.65
-------------------------------------------------------------------------------

Segment Leq : 66.65 dBA


Results segment # 3: QEW Sbound (day)
-------------------------------------

Source height = 1.97 m
```

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	8.00	4.36	4.36

ROAD (0.00 + 70.15 + 0.00) = 70.15 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	79.60	0.00	-6.43	-3.01	0.00	0.00	-1.52	68.63*
0	90	0.00	79.60	0.00	-6.43	-3.01	0.00	0.00	0.00	70.15

* Bright Zone !

Segment Leq : 70.15 dBA

Total Leq All Segments: 72.81 dBA

Results segment # 1: Lundys Lane (night)

Source height = 1.12 m

ROAD (0.00 + 59.59 + 0.00) = 59.59 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	60.84	0.00	-1.25	0.00	0.00	0.00	0.00	59.59

Segment Leq : 59.59 dBA

Results segment # 2: QEW NBound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	8.00	2.77	2.77

ROAD (0.00 + 66.65 + 0.00) = 66.65 dBA

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

```
-------------------------------------------------------------------------------
     0     90   0.00  79.60   0.00  -4.87  -3.01   0.00   0.00  -5.07  66.65
-------------------------------------------------------------------------------

Segment Leq : 66.65 dBA


Results segment # 3: QEW Sbound (night)
---------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        8.00 !        4.36 !         4.36

ROAD (0.00 + 70.15 + 0.00) = 70.15 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     90   0.00  79.60   0.00  -6.43  -3.01   0.00   0.00  -1.52  68.63*
     0     90   0.00  79.60   0.00  -6.43  -3.01   0.00   0.00   0.00  70.15
-------------------------------------------------------------------------------

 * Bright Zone !

Segment Leq : 70.15 dBA

Total Leq All Segments: 72.01 dBA




TOTAL Leq FROM ALL SOURCES (DAY): 72.81
                           (NIGHT): 72.01
```

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 17:06:45
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: bwest.te Time Period: Day/Night 16/8 hours
Description: Building B West Facade Floor 1

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

Car traffic volume : 21696/2411 veh/TimePeriod *
Medium truck volume : 535/59 veh/TimePeriod *
Heavy truck volume : 357/40 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16890
Percentage of Annual Growth : 2.00
Number of Years of Growth : 20.00
Medium Truck % of Total Volume : 2.37
Heavy Truck % of Total Volume : 1.58
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Lundys Lane (day/night)

Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 20.00 / 20.00 m
Receiver height : 2.00 / 2.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 23750
Percentage of Annual Growth : 2.00

```
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 2: QEW NBound (day/night)
---------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  40.00 / 40.00  m
Receiver height           :   2.00 / 2.00   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :   4.50 / 4.50   m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Road data, segment # 3: QEW Sbound (day/night)
---------------------------------------------
Car traffic volume  : 20375/10186 veh/TimePeriod  *
Medium truck volume :  1273/637   veh/TimePeriod  *
Heavy truck volume  :  3820/1910  veh/TimePeriod  *
Posted speed limit  :   100 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  23750
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 3: QEW Sbound (day/night)
---------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  60.00 / 60.00  m
Receiver height           :   2.00 / 2.00   m
```

```
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :   4.50 / 4.50   m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Results segment # 1: Lundys Lane (day)
--------------------------------------

Source height = 1.12 m

ROAD (0.00 + 62.95 + 0.00) = 62.95 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90      0   0.00  67.21   0.00  -1.25  -3.01   0.00   0.00   0.00  62.95
-------------------------------------------------------------------------------

Segment Leq : 62.95 dBA


Results segment # 2: QEW NBound (day)
-------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        2.00 !        0.87 !         0.87

ROAD (0.00 + 63.69 + 0.00) = 63.69 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.00  79.60   0.00  -4.26   0.00   0.00   0.00 -11.65  63.69
-------------------------------------------------------------------------------

Segment Leq : 63.69 dBA


Results segment # 3: QEW Sbound (day)
-------------------------------------

Source height = 1.97 m
```

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	2.00	1.25	1.25

ROAD (0.00 + 63.13 + 0.00) = 63.13 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	79.60	0.00	-6.02	0.00	0.00	0.00	-10.45	63.13

Segment Leq : 63.13 dBA

Total Leq All Segments: 68.04 dBA

Results segment # 1: Lundys Lane (night)

Source height = 1.12 m

ROAD (0.00 + 56.43 + 0.00) = 56.43 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	60.69	0.00	-1.25	-3.01	0.00	0.00	0.00	56.43

Segment Leq : 56.43 dBA

Results segment # 2: QEW NBound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	2.00	0.87	0.87

ROAD (0.00 + 63.69 + 0.00) = 63.69 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	79.60	0.00	-4.26	0.00	0.00	0.00	-11.65	63.69

Segment Leq : 63.69 dBA

Results segment # 3: QEW Sbound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	2.00	1.25	1.25

ROAD (0.00 + 63.13 + 0.00) = 63.13 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	79.60	0.00	-6.02	0.00	0.00	0.00	-10.45	63.13

Segment Leq : 63.13 dBA

Total Leq All Segments: 66.84 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 68.04
(NIGHT): 66.84

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 17:07:00
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

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

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

Car traffic volume : 21696/2411 veh/TimePeriod *
Medium truck volume : 535/59 veh/TimePeriod *
Heavy truck volume : 357/40 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16890
Percentage of Annual Growth : 2.00
Number of Years of Growth : 20.00
Medium Truck % of Total Volume : 2.37
Heavy Truck % of Total Volume : 1.58
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Lundys Lane (day/night)

Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 20.00 / 20.00 m
Receiver height : 5.00 / 5.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 23750
Percentage of Annual Growth : 2.00

```
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 2: QEW NBound (day/night)
---------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  40.00 / 40.00  m
Receiver height           :   5.00 / 5.00   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :   4.50 / 4.50   m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Road data, segment # 3: QEW Sbound (day/night)
---------------------------------------------
Car traffic volume  : 20375/10186 veh/TimePeriod  *
Medium truck volume :  1273/637   veh/TimePeriod  *
Heavy truck volume  :  3820/1910  veh/TimePeriod  *
Posted speed limit  :   100 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  23750
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 3: QEW Sbound (day/night)
---------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  60.00 / 60.00  m
Receiver height           :   5.00 / 5.00   m
```

```
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :   4.50 / 4.50   m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Results segment # 1: Lundys Lane (day)
--------------------------------------

Source height = 1.12 m

ROAD (0.00 + 62.95 + 0.00) = 62.95 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90      0   0.00  67.21   0.00  -1.25  -3.01   0.00   0.00   0.00  62.95
-------------------------------------------------------------------------------

Segment Leq : 62.95 dBA


Results segment # 2: QEW NBound (day)
-------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        5.00 !        3.53 !         3.53

ROAD (0.00 + 75.34 + 0.00) = 75.34 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.00  79.60   0.00  -4.26   0.00   0.00   0.00  -3.85  71.49*
   -90     90   0.00  79.60   0.00  -4.26   0.00   0.00   0.00   0.00  75.34
-------------------------------------------------------------------------------

 * Bright Zone !

Segment Leq : 75.34 dBA


Results segment # 3: QEW Sbound (day)
```

```
-------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
-----------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        5.00 !        4.02 !         4.02

ROAD (0.00 + 73.57 + 0.00) = 73.57 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.00  79.60   0.00  -6.02   0.00   0.00   0.00  -0.84  72.74*
   -90     90   0.00  79.60   0.00  -6.02   0.00   0.00   0.00   0.00  73.57
-------------------------------------------------------------------------------

 * Bright Zone !

Segment Leq : 73.57 dBA

Total Leq All Segments: 77.70 dBA


Results segment # 1: Lundys Lane (night)
---------------------------------------

Source height = 1.12 m

ROAD (0.00 + 56.43 + 0.00) = 56.43 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90      0   0.00  60.69   0.00  -1.25  -3.01   0.00   0.00   0.00  56.43
-------------------------------------------------------------------------------

Segment Leq : 56.43 dBA


Results segment # 2: QEW NBound (night)
---------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
-----------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        5.00 !        3.53 !         3.53
```

ROAD (0.00 + 75.34 + 0.00) = 75.34 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	79.60	0.00	-4.26	0.00	0.00	0.00	-3.85	71.49*
-90	90	0.00	79.60	0.00	-4.26	0.00	0.00	0.00	0.00	75.34

* Bright Zone !

Segment Leq : 75.34 dBA

Results segment # 3: QEW Sbound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	5.00	4.02	4.02

ROAD (0.00 + 73.57 + 0.00) = 73.57 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	79.60	0.00	-6.02	0.00	0.00	0.00	-0.84	72.74*
-90	90	0.00	79.60	0.00	-6.02	0.00	0.00	0.00	0.00	73.57

* Bright Zone !

Segment Leq : 73.57 dBA

Total Leq All Segments: 77.59 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 77.70
(NIGHT): 77.59

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 17:07:17
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: b3west.te Time Period: Day/Night 16/8 hours
Description: Building B West Facade Floor 3

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

Car traffic volume : 21696/2411 veh/TimePeriod *
Medium truck volume : 535/59 veh/TimePeriod *
Heavy truck volume : 357/40 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16890
Percentage of Annual Growth : 2.00
Number of Years of Growth : 20.00
Medium Truck % of Total Volume : 2.37
Heavy Truck % of Total Volume : 1.58
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Lundys Lane (day/night)

Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 20.00 / 20.00 m
Receiver height : 8.00 / 8.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 23750
Percentage of Annual Growth : 2.00

```
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 2: QEW NBound (day/night)
---------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  40.00 / 40.00  m
Receiver height           :   8.00 / 8.00   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :   4.50 / 4.50   m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Road data, segment # 3: QEW Sbound (day/night)
---------------------------------------------
Car traffic volume  : 20375/10186 veh/TimePeriod  *
Medium truck volume :  1273/637   veh/TimePeriod  *
Heavy truck volume  :  3820/1910  veh/TimePeriod  *
Posted speed limit  :   100 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  23750
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 3: QEW Sbound (day/night)
---------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  60.00 / 60.00  m
Receiver height           :   8.00 / 8.00   m
```

```
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :   4.50 / 4.50   m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Results segment # 1: Lundys Lane (day)
---------------------------------------

Source height = 1.12 m

ROAD (0.00 + 62.95 + 0.00) = 62.95 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90      0   0.00  67.21   0.00  -1.25  -3.01   0.00   0.00   0.00  62.95
-------------------------------------------------------------------------------

Segment Leq : 62.95 dBA


Results segment # 2: QEW NBound (day)
---------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        8.00 !        6.20 !         6.20

ROAD (0.00 + 75.34 + 0.00) = 75.34 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.00  79.60   0.00  -4.26   0.00   0.00   0.00  -0.10  75.23*
   -90     90   0.00  79.60   0.00  -4.26   0.00   0.00   0.00   0.00  75.34
-------------------------------------------------------------------------------

 * Bright Zone !

Segment Leq : 75.34 dBA


Results segment # 3: QEW Sbound (day)
```

```
------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        8.00 !        6.80 !         6.80

ROAD (0.00 + 73.57 + 0.00) = 73.57 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.00  79.60   0.00  -6.02   0.00   0.00   0.00  -0.07  73.51*
   -90     90   0.00  79.60   0.00  -6.02   0.00   0.00   0.00   0.00  73.57
-------------------------------------------------------------------------------

 * Bright Zone !

Segment Leq : 73.57 dBA

Total Leq All Segments: 77.70 dBA


Results segment # 1: Lundys Lane (night)
----------------------------------------

Source height = 1.12 m

ROAD (0.00 + 56.43 + 0.00) = 56.43 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90      0   0.00  60.69   0.00  -1.25  -3.01   0.00   0.00   0.00  56.43
-------------------------------------------------------------------------------

Segment Leq : 56.43 dBA


Results segment # 2: QEW NBound (night)
---------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        8.00 !        6.20 !         6.20
```

ROAD (0.00 + 75.34 + 0.00) = 75.34 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	79.60	0.00	-4.26	0.00	0.00	0.00	-0.10	75.23*
-90	90	0.00	79.60	0.00	-4.26	0.00	0.00	0.00	0.00	75.34

* Bright Zone !

Segment Leq : 75.34 dBA

Results segment # 3: QEW Sbound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	8.00	6.80	6.80

ROAD (0.00 + 73.57 + 0.00) = 73.57 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	79.60	0.00	-6.02	0.00	0.00	0.00	-0.07	73.51*
-90	90	0.00	79.60	0.00	-6.02	0.00	0.00	0.00	0.00	73.57

* Bright Zone !

Segment Leq : 73.57 dBA

Total Leq All Segments: 77.59 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 77.70
(NIGHT): 77.59

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 17:08:11
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: ceast.te Time Period: Day/Night 16/8 hours
Description: Building C East Facade Floor 1

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

Car traffic volume : 22572/2508 veh/TimePeriod *
Medium truck volume : 557/62 veh/TimePeriod *
Heavy truck volume : 371/41 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16890
Percentage of Annual Growth : 2.00
Number of Years of Growth : 22.00
Medium Truck % of Total Volume : 2.37
Heavy Truck % of Total Volume : 1.58
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Lundys Lane (day/night)

Angle1 Angle2 : 0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 65.00 / 65.00 m
Receiver height : 2.00 / 2.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Lundys Lane (day)

Source height = 1.12 m

ROAD (0.00 + 58.00 + 0.00) = 58.00 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	67.38	0.00	-6.37	-3.01	0.00	0.00	0.00	58.00

Segment Leq : 58.00 dBA

Total Leq All Segments: 58.00 dBA

Results segment # 1: Lundys Lane (night)

Source height = 1.12 m

ROAD (0.00 + 51.46 + 0.00) = 51.46 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	60.84	0.00	-6.37	-3.01	0.00	0.00	0.00	51.46

Segment Leq : 51.46 dBA

Total Leq All Segments: 51.46 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 58.00
(NIGHT): 51.46

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 17:14:52
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: c2east.te Time Period: Day/Night 16/8 hours
Description: Building C East Facade Floor 2

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

Car traffic volume : 22572/2508 veh/TimePeriod *
Medium truck volume : 557/62 veh/TimePeriod *
Heavy truck volume : 371/41 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16890
Percentage of Annual Growth : 2.00
Number of Years of Growth : 22.00
Medium Truck % of Total Volume : 2.37
Heavy Truck % of Total Volume : 1.58
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Lundys Lane (day/night)

Angle1 Angle2 : 0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 65.00 / 65.00 m
Receiver height : 5.00 / 5.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Lundys Lane (day)

Source height = 1.12 m

ROAD (0.00 + 58.00 + 0.00) = 58.00 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	67.38	0.00	-6.37	-3.01	0.00	0.00	0.00	58.00

Segment Leq : 58.00 dBA

Total Leq All Segments: 58.00 dBA

Results segment # 1: Lundys Lane (night)

Source height = 1.12 m

ROAD (0.00 + 51.46 + 0.00) = 51.46 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	60.84	0.00	-6.37	-3.01	0.00	0.00	0.00	51.46

Segment Leq : 51.46 dBA

Total Leq All Segments: 51.46 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 58.00
(NIGHT): 51.46

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 17:15:04
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: c3east.te Time Period: Day/Night 16/8 hours
Description: Building C East Facade Floor 3

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

Car traffic volume : 22572/2508 veh/TimePeriod *
Medium truck volume : 557/62 veh/TimePeriod *
Heavy truck volume : 371/41 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16890
Percentage of Annual Growth : 2.00
Number of Years of Growth : 22.00
Medium Truck % of Total Volume : 2.37
Heavy Truck % of Total Volume : 1.58
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Lundys Lane (day/night)

Angle1 Angle2 : 0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 65.00 / 65.00 m
Receiver height : 8.00 / 8.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Lundys Lane (day)

Source height = 1.12 m

ROAD (0.00 + 58.00 + 0.00) = 58.00 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	67.38	0.00	-6.37	-3.01	0.00	0.00	0.00	58.00

Segment Leq : 58.00 dBA

Total Leq All Segments: 58.00 dBA

Results segment # 1: Lundys Lane (night)

Source height = 1.12 m

ROAD (0.00 + 51.46 + 0.00) = 51.46 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	60.84	0.00	-6.37	-3.01	0.00	0.00	0.00	51.46

Segment Leq : 51.46 dBA

Total Leq All Segments: 51.46 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 58.00
(NIGHT): 51.46

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 18:02:54
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: cnorth.te Time Period: Day/Night 16/8 hours
Description: Building C North Facade Floor 1

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 23750
Percentage of Annual Growth : 2.00
Number of Years of Growth : 24.00
Medium Truck % of Total Volume : 5.00
Heavy Truck % of Total Volume : 15.00
Day (16 hrs) % of Total Volume : 66.67

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

Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 36.00 / 36.00 m
Receiver height : 2.00 / 2.00 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 0.00 deg
Barrier height : 3.00 m
Elevation : 10.00 m
Barrier receiver distance : 2.50 / 2.50 m
Source elevation : -10.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h

```
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  23750
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 2: QEW SBound (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  56.00 / 56.00  m
Receiver height           :   2.00 / 2.00   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 0.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :   2.50 / 2.50   m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


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

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        2.00 !        1.30 !         1.30

ROAD (0.00 + 60.90 + 0.00) = 60.90 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90      0   0.00  79.60   0.00  -3.80  -3.01   0.00   0.00 -11.89  60.90
-------------------------------------------------------------------------------

Segment Leq : 60.90 dBA
```

Results segment # 2: QEW SBound (day)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	2.00	1.55	1.55

ROAD (0.00 + 59.95 + 0.00) = 59.95 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	79.60	0.00	-5.72	-3.01	0.00	0.00	-10.91	59.95

Segment Leq : 59.95 dBA

Total Leq All Segments: 63.46 dBA

Results segment # 1: QEW Nbound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	2.00	1.30	1.30

ROAD (0.00 + 60.90 + 0.00) = 60.90 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	79.60	0.00	-3.80	-3.01	0.00	0.00	-11.89	60.90

Segment Leq : 60.90 dBA

Results segment # 2: QEW SBound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	2.00	1.55	1.55

ROAD (0.00 + 59.95 + 0.00) = 59.95 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	79.60	0.00	-5.72	-3.01	0.00	0.00	-10.91	59.95

Segment Leq : 59.95 dBA

Total Leq All Segments: 63.46 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 63.46
(NIGHT): 63.46

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 18:03:08
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: c2north.te Time Period: Day/Night 16/8 hours
Description: Building C North Facade Floor 2

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 23750
Percentage of Annual Growth : 2.00
Number of Years of Growth : 24.00
Medium Truck % of Total Volume : 5.00
Heavy Truck % of Total Volume : 15.00
Day (16 hrs) % of Total Volume : 66.67

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

Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 36.00 / 36.00 m
Receiver height : 5.00 / 5.00 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 0.00 deg
Barrier height : 3.00 m
Elevation : 10.00 m
Barrier receiver distance : 2.50 / 2.50 m
Source elevation : -10.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h

```
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  23750
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 2: QEW SBound (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  56.00 / 56.00  m
Receiver height           :   5.00 / 5.00   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 0.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :   2.50 / 2.50   m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


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

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        5.00 !        4.09 !         4.09

ROAD (0.00 + 72.78 + 0.00) = 72.78 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90      0   0.00  79.60   0.00  -3.80  -3.01   0.00   0.00  -0.47  72.31*
   -90      0   0.00  79.60   0.00  -3.80  -3.01   0.00   0.00   0.00  72.78
-------------------------------------------------------------------------------
```

```
 * Bright Zone !

Segment Leq : 72.78 dBA


Results segment # 2: QEW SBound (day)
-------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        5.00 !        4.42 !         4.42

ROAD (0.00 + 70.86 + 0.00) = 70.86 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90      0   0.00  79.60   0.00  -5.72  -3.01   0.00   0.00  -0.25  70.61*
   -90      0   0.00  79.60   0.00  -5.72  -3.01   0.00   0.00   0.00  70.86
-------------------------------------------------------------------------------

 * Bright Zone !

Segment Leq : 70.86 dBA

Total Leq All Segments: 74.94 dBA


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

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        5.00 !        4.10 !         4.10

ROAD (0.00 + 72.78 + 0.00) = 72.78 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90      0   0.00  79.60   0.00  -3.80  -3.01   0.00   0.00  -0.47  72.31*
   -90      0   0.00  79.60   0.00  -3.80  -3.01   0.00   0.00   0.00  72.78
-------------------------------------------------------------------------------
```

* Bright Zone !

Segment Leq : 72.78 dBA

Results segment # 2: QEW SBound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	5.00	4.42	4.42

ROAD (0.00 + 70.86 + 0.00) = 70.86 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	79.60	0.00	-5.72	-3.01	0.00	0.00	-0.25	70.61*
-90	0	0.00	79.60	0.00	-5.72	-3.01	0.00	0.00	0.00	70.86

* Bright Zone !

Segment Leq : 70.86 dBA

Total Leq All Segments: 74.94 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 74.94
(NIGHT): 74.94

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 17:16:29
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: c3north.te Time Period: Day/Night 16/8 hours
Description: Building C North Facade Floor 3

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 23750
Percentage of Annual Growth : 2.00
Number of Years of Growth : 24.00
Medium Truck % of Total Volume : 5.00
Heavy Truck % of Total Volume : 15.00
Day (16 hrs) % of Total Volume : 66.67

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

Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 36.00 / 36.00 m
Receiver height : 8.00 / 8.00 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 0.00 deg
Barrier height : 3.00 m
Elevation : 10.00 m
Barrier receiver distance : 2.50 / 2.50 m
Source elevation : -10.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h

```
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  23750
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 2: QEW SBound (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  56.00 / 56.00  m
Receiver height           :   5.00 / 5.00   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 0.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :   2.50 / 2.50   m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


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

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        8.00 !        6.89 !         6.89

ROAD (0.00 + 72.78 + 0.00) = 72.78 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90      0   0.00  79.60   0.00  -3.80  -3.01   0.00   0.00  -0.06  72.73*
   -90      0   0.00  79.60   0.00  -3.80  -3.01   0.00   0.00   0.00  72.78
-------------------------------------------------------------------------------
```

```
 * Bright Zone !

Segment Leq : 72.78 dBA


Results segment # 2: QEW SBound (day)
-------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        5.00 !        4.42 !         4.42

ROAD (0.00 + 70.86 + 0.00) = 70.86 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90      0   0.00  79.60   0.00  -5.72  -3.01   0.00   0.00  -0.25  70.61*
   -90      0   0.00  79.60   0.00  -5.72  -3.01   0.00   0.00   0.00  70.86
-------------------------------------------------------------------------------

 * Bright Zone !

Segment Leq : 70.86 dBA

Total Leq All Segments: 74.94 dBA


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

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        8.00 !        6.89 !         6.89

ROAD (0.00 + 72.78 + 0.00) = 72.78 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90      0   0.00  79.60   0.00  -3.80  -3.01   0.00   0.00  -0.06  72.73*
   -90      0   0.00  79.60   0.00  -3.80  -3.01   0.00   0.00   0.00  72.78
-------------------------------------------------------------------------------
```

* Bright Zone !

Segment Leq : 72.78 dBA

Results segment # 2: QEW SBound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	5.00	4.42	4.42

ROAD (0.00 + 70.86 + 0.00) = 70.86 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	79.60	0.00	-5.72	-3.01	0.00	0.00	-0.25	70.61*
-90	0	0.00	79.60	0.00	-5.72	-3.01	0.00	0.00	0.00	70.86

* Bright Zone !

Segment Leq : 70.86 dBA

Total Leq All Segments: 74.94 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 74.94
(NIGHT): 74.94

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 18:04:33
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: csouth.te Time Period: Day/Night 16/8 hours
Description: Building C South Facade Floor 1

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

Car traffic volume : 22572/2508 veh/TimePeriod *
Medium truck volume : 557/62 veh/TimePeriod *
Heavy truck volume : 371/41 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16890
Percentage of Annual Growth : 2.00
Number of Years of Growth : 22.00
Medium Truck % of Total Volume : 2.37
Heavy Truck % of Total Volume : 1.58
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Lundys Lane (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 50.00 / 50.00 m
Receiver height : 2.00 / 2.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 23750
Percentage of Annual Growth : 2.00

```
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 2: QEW NBound (day/night)
---------------------------------------------
Angle1   Angle2           :   0.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  58.00 / 58.00  m
Receiver height           :   2.00 / 2.00   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :   0.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :  32.00 / 32.00  m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Road data, segment # 3: QEW Sbound (day/night)
---------------------------------------------
Car traffic volume  : 20375/10186 veh/TimePeriod  *
Medium truck volume :  1273/637   veh/TimePeriod  *
Heavy truck volume  :  3820/1910  veh/TimePeriod  *
Posted speed limit  :   100 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  23750
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 3: QEW Sbound (day/night)
---------------------------------------------
Angle1   Angle2           :   0.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  78.00 / 78.00  m
Receiver height           :   2.00 / 2.00   m
```

```
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :   0.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :  52.00 / 52.00  m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Results segment # 1: Lundys Lane (day)
--------------------------------------

Source height = 1.12 m

ROAD (0.00 + 62.15 + 0.00) = 62.15 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.00  67.38   0.00  -5.23   0.00   0.00   0.00   0.00  62.15
-------------------------------------------------------------------------------

Segment Leq : 62.15 dBA


Results segment # 2: QEW NBound (day)
-------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        2.00 !       -3.53 !        -3.53

ROAD (0.00 + 56.04 + 0.00) = 56.04 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     90   0.00  79.60   0.00  -5.87  -3.01   0.00   0.00 -14.67  56.04
-------------------------------------------------------------------------------

Segment Leq : 56.04 dBA


Results segment # 3: QEW Sbound (day)
-------------------------------------

Source height = 1.97 m
```

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	2.00	-4.69	-4.69

ROAD (0.00 + 54.28 + 0.00) = 54.28 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	79.60	0.00	-7.16	-3.01	0.00	0.00	-15.15	54.28

Segment Leq : 54.28 dBA

Total Leq All Segments: 63.64 dBA

Results segment # 1: Lundys Lane (night)

Source height = 1.12 m

ROAD (0.00 + 55.61 + 0.00) = 55.61 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	60.84	0.00	-5.23	0.00	0.00	0.00	0.00	55.61

Segment Leq : 55.61 dBA

Results segment # 2: QEW NBound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	2.00	-3.53	-3.53

ROAD (0.00 + 56.04 + 0.00) = 56.04 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	79.60	0.00	-5.87	-3.01	0.00	0.00	-14.67	56.04

Segment Leq : 56.04 dBA

Results segment # 3: QEW Sbound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	2.00	-4.69	-4.69

ROAD (0.00 + 54.28 + 0.00) = 54.28 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	79.60	0.00	-7.16	-3.01	0.00	0.00	-15.15	54.28

Segment Leq : 54.28 dBA

Total Leq All Segments: 60.14 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 63.64
(NIGHT): 60.14

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 18:04:51
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: c2south.te Time Period: Day/Night 16/8 hours
Description: Building C South Facade Floor 2

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

Car traffic volume : 22572/2508 veh/TimePeriod *
Medium truck volume : 557/62 veh/TimePeriod *
Heavy truck volume : 371/41 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16890
Percentage of Annual Growth : 2.00
Number of Years of Growth : 22.00
Medium Truck % of Total Volume : 2.37
Heavy Truck % of Total Volume : 1.58
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Lundys Lane (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 50.00 / 50.00 m
Receiver height : 5.00 / 5.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 23750
Percentage of Annual Growth : 2.00

```
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 2: QEW NBound (day/night)
---------------------------------------------
Angle1   Angle2           :   0.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  58.00 / 58.00  m
Receiver height           :   5.00 / 5.00   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :   0.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :  32.00 / 32.00  m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Road data, segment # 3: QEW Sbound (day/night)
---------------------------------------------
Car traffic volume  : 20375/10186 veh/TimePeriod  *
Medium truck volume :  1273/637   veh/TimePeriod  *
Heavy truck volume  :  3820/1910  veh/TimePeriod  *
Posted speed limit  :   100 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  23750
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 3: QEW Sbound (day/night)
---------------------------------------------
Angle1   Angle2           :   0.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  78.00 / 78.00  m
Receiver height           :   5.00 / 5.00   m
```

```
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :   0.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :  52.00 / 52.00  m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Results segment # 1: Lundys Lane (day)
--------------------------------------

Source height = 1.12 m

ROAD (0.00 + 62.15 + 0.00) = 62.15 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.00  67.38   0.00  -5.23   0.00   0.00   0.00   0.00  62.15
-------------------------------------------------------------------------------

Segment Leq : 62.15 dBA


Results segment # 2: QEW NBound (day)
-------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        5.00 !       -2.19 !        -2.19

ROAD (0.00 + 57.64 + 0.00) = 57.64 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     90   0.00  79.60   0.00  -5.87  -3.01   0.00   0.00 -13.07  57.64
-------------------------------------------------------------------------------

Segment Leq : 57.64 dBA


Results segment # 3: QEW Sbound (day)
-------------------------------------

Source height = 1.97 m
```

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	5.00	-3.69	-3.69

ROAD (0.00 + 55.27 + 0.00) = 55.27 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	79.60	0.00	-7.16	-3.01	0.00	0.00	-14.16	55.27

Segment Leq : 55.27 dBA

Total Leq All Segments: 64.08 dBA

Results segment # 1: Lundys Lane (night)

Source height = 1.12 m

ROAD (0.00 + 55.61 + 0.00) = 55.61 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	60.84	0.00	-5.23	0.00	0.00	0.00	0.00	55.61

Segment Leq : 55.61 dBA

Results segment # 2: QEW NBound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	5.00	-2.19	-2.19

ROAD (0.00 + 57.65 + 0.00) = 57.65 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	79.60	0.00	-5.87	-3.01	0.00	0.00	-13.07	57.65

Segment Leq : 57.65 dBA

Results segment # 3: QEW Sbound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	5.00	-3.69	-3.69

ROAD (0.00 + 55.27 + 0.00) = 55.27 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	79.60	0.00	-7.16	-3.01	0.00	0.00	-14.16	55.27

Segment Leq : 55.27 dBA

Total Leq All Segments: 61.08 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 64.08
(NIGHT): 61.08

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 17:17:35
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: c3south.te Time Period: Day/Night 16/8 hours
Description: Building C South Facade Floor 3

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

Car traffic volume : 22572/2508 veh/TimePeriod *
Medium truck volume : 557/62 veh/TimePeriod *
Heavy truck volume : 371/41 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16890
Percentage of Annual Growth : 2.00
Number of Years of Growth : 22.00
Medium Truck % of Total Volume : 2.37
Heavy Truck % of Total Volume : 1.58
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Lundys Lane (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 50.00 / 50.00 m
Receiver height : 8.00 / 5.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 23750
Percentage of Annual Growth : 2.00

```
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 2: QEW NBound (day/night)
---------------------------------------------
Angle1   Angle2           :   0.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  58.00 / 58.00  m
Receiver height           :   8.00 / 8.00   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :   0.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :  32.00 / 32.00  m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Road data, segment # 3: QEW Sbound (day/night)
---------------------------------------------
Car traffic volume  : 20375/10186 veh/TimePeriod  *
Medium truck volume :  1273/637   veh/TimePeriod  *
Heavy truck volume  :  3820/1910  veh/TimePeriod  *
Posted speed limit  :   100 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  23750
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 3: QEW Sbound (day/night)
---------------------------------------------
Angle1   Angle2           :   0.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  78.00 / 78.00  m
Receiver height           :   8.00 / 8.00   m
```

```
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :   0.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :  52.00 / 52.00  m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Results segment # 1: Lundys Lane (day)
--------------------------------------

Source height = 1.12 m

ROAD (0.00 + 62.15 + 0.00) = 62.15 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.00  67.38   0.00  -5.23   0.00   0.00   0.00   0.00  62.15
-------------------------------------------------------------------------------

Segment Leq : 62.15 dBA


Results segment # 2: QEW NBound (day)
-------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        8.00 !       -0.85 !        -0.85

ROAD (0.00 + 59.60 + 0.00) = 59.60 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     90   0.00  79.60   0.00  -5.87  -3.01   0.00   0.00 -11.11  59.60
-------------------------------------------------------------------------------

Segment Leq : 59.60 dBA


Results segment # 3: QEW Sbound (day)
-------------------------------------

Source height = 1.97 m
```

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	8.00	-2.69	-2.69

ROAD (0.00 + 56.38 + 0.00) = 56.38 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	79.60	0.00	-7.16	-3.01	0.00	0.00	-13.04	56.38

Segment Leq : 56.38 dBA

Total Leq All Segments: 64.75 dBA

Results segment # 1: Lundys Lane (night)

Source height = 1.12 m

ROAD (0.00 + 55.61 + 0.00) = 55.61 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	60.84	0.00	-5.23	0.00	0.00	0.00	0.00	55.61

Segment Leq : 55.61 dBA

Results segment # 2: QEW NBound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	8.00	-0.85	-0.85

ROAD (0.00 + 59.60 + 0.00) = 59.60 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	79.60	0.00	-5.87	-3.01	0.00	0.00	-11.11	59.60

Segment Leq : 59.60 dBA

Results segment # 3: QEW Sbound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	8.00	-2.69	-2.69

ROAD (0.00 + 56.39 + 0.00) = 56.39 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	79.60	0.00	-7.16	-3.01	0.00	0.00	-13.04	56.39

Segment Leq : 56.39 dBA

Total Leq All Segments: 62.33 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 64.75
(NIGHT): 62.33

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 17:17:56
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: cwest.te Time Period: Day/Night 16/8 hours
Description: Building C West Facade Floor 1

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

Car traffic volume : 21696/2411 veh/TimePeriod *
Medium truck volume : 535/59 veh/TimePeriod *
Heavy truck volume : 357/40 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16890
Percentage of Annual Growth : 2.00
Number of Years of Growth : 20.00
Medium Truck % of Total Volume : 2.37
Heavy Truck % of Total Volume : 1.58
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Lundys Lane (day/night)

Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 45.00 / 45.00 m
Receiver height : 2.00 / 2.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 23750
Percentage of Annual Growth : 2.00

```
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 2: QEW NBound (day/night)
---------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  40.00 / 40.00  m
Receiver height           :   2.00 / 2.00   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :   2.50 / 23.00  m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Road data, segment # 3: QEW Sbound (day/night)
---------------------------------------------
Car traffic volume  : 20375/10186 veh/TimePeriod  *
Medium truck volume :  1273/637   veh/TimePeriod  *
Heavy truck volume  :  3820/1910  veh/TimePeriod  *
Posted speed limit  :   100 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  23750
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 3: QEW Sbound (day/night)
---------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  60.00 / 60.00  m
Receiver height           :   2.00 / 2.00   m
```

```
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :   2.50 / 2.50   m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Results segment # 1: Lundys Lane (day)
--------------------------------------

Source height = 1.12 m

ROAD (0.00 + 59.43 + 0.00) = 59.43 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90      0   0.00  67.21   0.00  -4.77  -3.01   0.00   0.00   0.00  59.43
-------------------------------------------------------------------------------

Segment Leq : 59.43 dBA


Results segment # 2: QEW NBound (day)
-------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        2.00 !        1.37 !         1.37

ROAD (0.00 + 63.70 + 0.00) = 63.70 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.00  79.60   0.00  -4.26   0.00   0.00   0.00 -11.63  63.70
-------------------------------------------------------------------------------

Segment Leq : 63.70 dBA


Results segment # 3: QEW Sbound (day)
-------------------------------------

Source height = 1.97 m
```

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	2.00	1.58	1.58

ROAD (0.00 + 62.79 + 0.00) = 62.79 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	79.60	0.00	-6.02	0.00	0.00	0.00	-10.79	62.79

Segment Leq : 62.79 dBA

Total Leq All Segments: 67.09 dBA

Results segment # 1: Lundys Lane (night)

Source height = 1.12 m

ROAD (0.00 + 52.91 + 0.00) = 52.91 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	60.69	0.00	-4.77	-3.01	0.00	0.00	0.00	52.91

Segment Leq : 52.91 dBA

Results segment # 2: QEW NBound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	2.00	-3.77	-3.77

ROAD (0.00 + 59.44 + 0.00) = 59.44 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	79.60	0.00	-4.26	0.00	0.00	0.00	-15.89	59.44

Segment Leq : 59.44 dBA

Results segment # 3: QEW Sbound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	2.00	1.58	1.58

ROAD (0.00 + 62.79 + 0.00) = 62.79 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	79.60	0.00	-6.02	0.00	0.00	0.00	-10.79	62.79

Segment Leq : 62.79 dBA

Total Leq All Segments: 64.74 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 67.09
(NIGHT): 64.74

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 17:18:51
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: c2west.te Time Period: Day/Night 16/8 hours
Description: Building C West Facade Floor 2

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

Car traffic volume : 21696/2411 veh/TimePeriod *
Medium truck volume : 535/59 veh/TimePeriod *
Heavy truck volume : 357/40 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16890
Percentage of Annual Growth : 2.00
Number of Years of Growth : 20.00
Medium Truck % of Total Volume : 2.37
Heavy Truck % of Total Volume : 1.58
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Lundys Lane (day/night)

Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 45.00 / 45.00 m
Receiver height : 5.00 / 5.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 23750
Percentage of Annual Growth : 2.00

```
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 2: QEW NBound (day/night)
---------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  40.00 / 40.00  m
Receiver height           :   5.00 / 5.00   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :   2.50 / 2.50   m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Road data, segment # 3: QEW Sbound (day/night)
---------------------------------------------
Car traffic volume  : 20375/10186 veh/TimePeriod  *
Medium truck volume :  1273/637   veh/TimePeriod  *
Heavy truck volume  :  3820/1910  veh/TimePeriod  *
Posted speed limit  :   100 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  23750
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 3: QEW Sbound (day/night)
---------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  60.00 / 60.00  m
Receiver height           :   5.00 / 5.00   m
```

```
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :   2.50 / 2.50   m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Results segment # 1: Lundys Lane (day)
--------------------------------------

Source height = 1.12 m

ROAD (0.00 + 59.43 + 0.00) = 59.43 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90      0   0.00  67.21   0.00  -4.77  -3.01   0.00   0.00   0.00  59.43
-------------------------------------------------------------------------------

Segment Leq : 59.43 dBA


Results segment # 2: QEW NBound (day)
-------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        5.00 !        4.19 !         4.19

ROAD (0.00 + 75.34 + 0.00) = 75.34 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.00  79.60   0.00  -4.26   0.00   0.00   0.00  -0.39  74.95*
   -90     90   0.00  79.60   0.00  -4.26   0.00   0.00   0.00   0.00  75.34
-------------------------------------------------------------------------------

 * Bright Zone !

Segment Leq : 75.34 dBA


Results segment # 3: QEW Sbound (day)
```

```
------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        5.00 !        4.46 !         4.46

ROAD (0.00 + 73.57 + 0.00) = 73.57 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.00  79.60   0.00  -6.02   0.00   0.00   0.00  -0.24  73.34*
   -90     90   0.00  79.60   0.00  -6.02   0.00   0.00   0.00   0.00  73.57
-------------------------------------------------------------------------------

 * Bright Zone !

Segment Leq : 73.57 dBA

Total Leq All Segments: 77.62 dBA


Results segment # 1: Lundys Lane (night)
----------------------------------------

Source height = 1.12 m

ROAD (0.00 + 52.91 + 0.00) = 52.91 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90      0   0.00  60.69   0.00  -4.77  -3.01   0.00   0.00   0.00  52.91
-------------------------------------------------------------------------------

Segment Leq : 52.91 dBA


Results segment # 2: QEW NBound (night)
---------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        5.00 !        4.19 !         4.19
```

ROAD (0.00 + 75.34 + 0.00) = 75.34 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	79.60	0.00	-4.26	0.00	0.00	0.00	-0.39	74.95*
-90	90	0.00	79.60	0.00	-4.26	0.00	0.00	0.00	0.00	75.34

* Bright Zone !

Segment Leq : 75.34 dBA

Results segment # 3: QEW Sbound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	5.00	4.46	4.46

ROAD (0.00 + 73.57 + 0.00) = 73.57 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	79.60	0.00	-6.02	0.00	0.00	0.00	-0.24	73.34*
-90	90	0.00	79.60	0.00	-6.02	0.00	0.00	0.00	0.00	73.57

* Bright Zone !

Segment Leq : 73.57 dBA

Total Leq All Segments: 77.57 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 77.62
(NIGHT): 77.57

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 17:19:05
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: c3west.te Time Period: Day/Night 16/8 hours
Description: Building C West Facade Floor 3

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

Car traffic volume : 21696/2411 veh/TimePeriod *
Medium truck volume : 535/59 veh/TimePeriod *
Heavy truck volume : 357/40 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16890
Percentage of Annual Growth : 2.00
Number of Years of Growth : 20.00
Medium Truck % of Total Volume : 2.37
Heavy Truck % of Total Volume : 1.58
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Lundys Lane (day/night)

Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 45.00 / 45.00 m
Receiver height : 8.00 / 8.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 23750
Percentage of Annual Growth : 2.00

```
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 2: QEW NBound (day/night)
---------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  40.00 / 40.00  m
Receiver height           :   8.00 / 8.00   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :   2.50 / 2.50   m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Road data, segment # 3: QEW Sbound (day/night)
---------------------------------------------
Car traffic volume  : 20375/10186 veh/TimePeriod  *
Medium truck volume :  1273/637   veh/TimePeriod  *
Heavy truck volume  :  3820/1910  veh/TimePeriod  *
Posted speed limit  :   100 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  23750
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 3: QEW Sbound (day/night)
---------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  60.00 / 60.00  m
Receiver height           :   8.00 / 8.00   m
```

```
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :   2.50 / 2.50   m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Results segment # 1: Lundys Lane (day)
--------------------------------------

Source height = 1.12 m

ROAD (0.00 + 59.43 + 0.00) = 59.43 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90      0   0.00  67.21   0.00  -4.77  -3.01   0.00   0.00   0.00  59.43
-------------------------------------------------------------------------------

Segment Leq : 59.43 dBA


Results segment # 2: QEW NBound (day)
-------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        8.00 !        7.00 !         7.00

ROAD (0.00 + 75.34 + 0.00) = 75.34 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.00  79.60   0.00  -4.26   0.00   0.00   0.00  -0.05  75.28*
   -90     90   0.00  79.60   0.00  -4.26   0.00   0.00   0.00   0.00  75.34
-------------------------------------------------------------------------------

 * Bright Zone !

Segment Leq : 75.34 dBA


Results segment # 3: QEW Sbound (day)
```

```
------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        8.00 !        7.33 !         7.33

ROAD (0.00 + 73.57 + 0.00) = 73.57 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.00  79.60   0.00  -6.02   0.00   0.00   0.00  -0.04  73.53*
   -90     90   0.00  79.60   0.00  -6.02   0.00   0.00   0.00   0.00  73.57
-------------------------------------------------------------------------------

 * Bright Zone !

Segment Leq : 73.57 dBA

Total Leq All Segments: 77.62 dBA


Results segment # 1: Lundys Lane (night)
----------------------------------------

Source height = 1.12 m

ROAD (0.00 + 52.91 + 0.00) = 52.91 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90      0   0.00  60.69   0.00  -4.77  -3.01   0.00   0.00   0.00  52.91
-------------------------------------------------------------------------------

Segment Leq : 52.91 dBA


Results segment # 2: QEW NBound (night)
---------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        8.00 !        7.00 !         7.00
```

ROAD (0.00 + 75.34 + 0.00) = 75.34 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	79.60	0.00	-4.26	0.00	0.00	0.00	-0.05	75.28*
-90	90	0.00	79.60	0.00	-4.26	0.00	0.00	0.00	0.00	75.34

* Bright Zone !

Segment Leq : 75.34 dBA

Results segment # 3: QEW Sbound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	8.00	7.33	7.33

ROAD (0.00 + 73.57 + 0.00) = 73.57 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	79.60	0.00	-6.02	0.00	0.00	0.00	-0.04	73.53*
-90	90	0.00	79.60	0.00	-6.02	0.00	0.00	0.00	0.00	73.57

* Bright Zone !

Segment Leq : 73.57 dBA

Total Leq All Segments: 77.57 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 77.62
(NIGHT): 77.57

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 17:19:35
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: deast.te Time Period: Day/Night 16/8 hours
Description: Building D East Facade Floor 1

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

Car traffic volume : 25136/2793 veh/TimePeriod *
Medium truck volume : 620/69 veh/TimePeriod *
Heavy truck volume : 413/46 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16890
Percentage of Annual Growth : 2.50
Number of Years of Growth : 22.00
Medium Truck % of Total Volume : 2.37
Heavy Truck % of Total Volume : 1.58
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Lundys Lane (day/night)

Angle1 Angle2 : 0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 95.00 / 95.00 m
Receiver height : 2.00 / 2.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Lundys Lane (day)

Source height = 1.12 m

ROAD (0.00 + 56.82 + 0.00) = 56.82 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	67.85	0.00	-8.02	-3.01	0.00	0.00	0.00	56.82

Segment Leq : 56.82 dBA

Total Leq All Segments: 56.82 dBA

Results segment # 1: Lundys Lane (night)

Source height = 1.12 m

ROAD (0.00 + 50.29 + 0.00) = 50.29 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	61.32	0.00	-8.02	-3.01	0.00	0.00	0.00	50.29

Segment Leq : 50.29 dBA

Total Leq All Segments: 50.29 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 56.82
(NIGHT): 50.29

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 17:19:49
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: d2east.te Time Period: Day/Night 16/8 hours
Description: Building D East Facade Floor 2

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

Car traffic volume : 22572/2508 veh/TimePeriod *
Medium truck volume : 557/62 veh/TimePeriod *
Heavy truck volume : 371/41 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16890
Percentage of Annual Growth : 2.00
Number of Years of Growth : 22.00
Medium Truck % of Total Volume : 2.37
Heavy Truck % of Total Volume : 1.58
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Lundys Lane (day/night)

Angle1 Angle2 : 0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 95.00 / 95.00 m
Receiver height : 5.00 / 5.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Lundys Lane (day)

Source height = 1.12 m

ROAD (0.00 + 56.35 + 0.00) = 56.35 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	67.38	0.00	-8.02	-3.01	0.00	0.00	0.00	56.35

Segment Leq : 56.35 dBA

Total Leq All Segments: 56.35 dBA

Results segment # 1: Lundys Lane (night)

Source height = 1.12 m

ROAD (0.00 + 49.81 + 0.00) = 49.81 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	60.84	0.00	-8.02	-3.01	0.00	0.00	0.00	49.81

Segment Leq : 49.81 dBA

Total Leq All Segments: 49.81 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 56.35
(NIGHT): 49.81

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 17:20:21
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: d3east.te Time Period: Day/Night 16/8 hours
Description: Building D East Facade Floor 3

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

Car traffic volume : 22572/2508 veh/TimePeriod *
Medium truck volume : 557/62 veh/TimePeriod *
Heavy truck volume : 371/41 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16890
Percentage of Annual Growth : 2.00
Number of Years of Growth : 22.00
Medium Truck % of Total Volume : 2.37
Heavy Truck % of Total Volume : 1.58
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Lundys Lane (day/night)

Angle1 Angle2 : 0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 95.00 / 95.00 m
Receiver height : 8.00 / 8.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Lundys Lane (day)

Source height = 1.12 m

ROAD (0.00 + 56.35 + 0.00) = 56.35 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	67.38	0.00	-8.02	-3.01	0.00	0.00	0.00	56.35

Segment Leq : 56.35 dBA

Total Leq All Segments: 56.35 dBA

Results segment # 1: Lundys Lane (night)

Source height = 1.12 m

ROAD (0.00 + 49.81 + 0.00) = 49.81 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	60.84	0.00	-8.02	-3.01	0.00	0.00	0.00	49.81

Segment Leq : 49.81 dBA

Total Leq All Segments: 49.81 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 56.35
(NIGHT): 49.81

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 18:06:13
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: dnorth.te Time Period: Day/Night 16/8 hours
Description: Building D North Facade Floor 1

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 23750
Percentage of Annual Growth : 2.00
Number of Years of Growth : 24.00
Medium Truck % of Total Volume : 5.00
Heavy Truck % of Total Volume : 15.00
Day (16 hrs) % of Total Volume : 66.67

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

Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 36.00 / 36.00 m
Receiver height : 2.00 / 2.00 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 0.00 deg
Barrier height : 3.00 m
Elevation : 10.00 m
Barrier receiver distance : 2.50 / 2.50 m
Source elevation : -10.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h

```
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  23750
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 2: QEW SBound (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  56.00 / 56.00  m
Receiver height           :   2.00 / 2.00   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 0.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :   2.50 / 2.50   m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


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

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        2.00 !        1.30 !         1.30

ROAD (0.00 + 60.90 + 0.00) = 60.90 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90      0   0.00  79.60   0.00  -3.80  -3.01   0.00   0.00 -11.89  60.90
-------------------------------------------------------------------------------

Segment Leq : 60.90 dBA
```

Results segment # 2: QEW SBound (day)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	2.00	1.55	1.55

ROAD (0.00 + 59.95 + 0.00) = 59.95 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	79.60	0.00	-5.72	-3.01	0.00	0.00	-10.91	59.95

Segment Leq : 59.95 dBA

Total Leq All Segments: 63.46 dBA

Results segment # 1: QEW Nbound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	2.00	1.30	1.30

ROAD (0.00 + 60.90 + 0.00) = 60.90 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	79.60	0.00	-3.80	-3.01	0.00	0.00	-11.89	60.90

Segment Leq : 60.90 dBA

Results segment # 2: QEW SBound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	2.00	1.55	1.55

ROAD (0.00 + 59.95 + 0.00) = 59.95 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	79.60	0.00	-5.72	-3.01	0.00	0.00	-10.91	59.95

Segment Leq : 59.95 dBA

Total Leq All Segments: 63.46 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 63.46
(NIGHT): 63.46

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 18:06:28
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: d2north.te Time Period: Day/Night 16/8 hours
Description: Building D North Facade Floor 2

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 23750
Percentage of Annual Growth : 2.00
Number of Years of Growth : 24.00
Medium Truck % of Total Volume : 5.00
Heavy Truck % of Total Volume : 15.00
Day (16 hrs) % of Total Volume : 66.67

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

Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 36.00 / 36.00 m
Receiver height : 5.00 / 5.00 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 0.00 deg
Barrier height : 3.00 m
Elevation : 10.00 m
Barrier receiver distance : 2.50 / 2.50 m
Source elevation : -10.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h

```
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  23750
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 2: QEW SBound (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  56.00 / 56.00  m
Receiver height           :   5.00 / 5.00   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 0.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :   2.50 / 2.50   m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


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

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        5.00 !        4.09 !         4.09

ROAD (0.00 + 72.78 + 0.00) = 72.78 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90      0   0.00  79.60   0.00  -3.80  -3.01   0.00   0.00  -0.47  72.31*
   -90      0   0.00  79.60   0.00  -3.80  -3.01   0.00   0.00   0.00  72.78
-------------------------------------------------------------------------------
```

```
 * Bright Zone !

Segment Leq : 72.78 dBA


Results segment # 2: QEW SBound (day)
-------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        5.00 !        4.42 !         4.42

ROAD (0.00 + 70.86 + 0.00) = 70.86 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90      0   0.00  79.60   0.00  -5.72  -3.01   0.00   0.00  -0.25  70.61*
   -90      0   0.00  79.60   0.00  -5.72  -3.01   0.00   0.00   0.00  70.86
-------------------------------------------------------------------------------

 * Bright Zone !

Segment Leq : 70.86 dBA

Total Leq All Segments: 74.94 dBA


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

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        5.00 !        4.10 !         4.10

ROAD (0.00 + 72.78 + 0.00) = 72.78 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90      0   0.00  79.60   0.00  -3.80  -3.01   0.00   0.00  -0.47  72.31*
   -90      0   0.00  79.60   0.00  -3.80  -3.01   0.00   0.00   0.00  72.78
-------------------------------------------------------------------------------
```

* Bright Zone !

Segment Leq : 72.78 dBA

Results segment # 2: QEW SBound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	5.00	4.42	4.42

ROAD (0.00 + 70.86 + 0.00) = 70.86 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	79.60	0.00	-5.72	-3.01	0.00	0.00	-0.25	70.61*
-90	0	0.00	79.60	0.00	-5.72	-3.01	0.00	0.00	0.00	70.86

* Bright Zone !

Segment Leq : 70.86 dBA

Total Leq All Segments: 74.94 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 74.94
(NIGHT): 74.94

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 17:22:33
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: d3north.te Time Period: Day/Night 16/8 hours
Description: Building D North Facade Floor 3

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

Car traffic volume : 22912/11454 veh/TimePeriod *
Medium truck volume : 1432/716 veh/TimePeriod *
Heavy truck volume : 4296/2148 veh/TimePeriod *
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 23750
Percentage of Annual Growth : 2.50
Number of Years of Growth : 24.00
Medium Truck % of Total Volume : 5.00
Heavy Truck % of Total Volume : 15.00
Day (16 hrs) % of Total Volume : 66.67

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

Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 36.00 / 36.00 m
Receiver height : 8.00 / 8.00 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 0.00 deg
Barrier height : 3.00 m
Elevation : 10.00 m
Barrier receiver distance : 2.50 / 2.50 m
Source elevation : -10.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

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

Car traffic volume : 22911/11455 veh/TimePeriod
Medium truck volume : 1432/716 veh/TimePeriod
Heavy truck volume : 4296/2148 veh/TimePeriod
Posted speed limit : 100 km/h

```
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 2: QEW SBound (day/night)
-------------------------------------------
Angle1   Angle2           : -90.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  56.00 / 56.00  m
Receiver height           :   8.00 / 8.00   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 0.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :   2.50 / 2.50   m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


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

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        8.00 !        6.89 !         6.89

ROAD (0.00 + 73.29 + 0.00) = 73.29 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90      0   0.00  80.11   0.00  -3.80  -3.01   0.00   0.00  -0.06  73.24*
   -90      0   0.00  80.11   0.00  -3.80  -3.01   0.00   0.00   0.00  73.29
-------------------------------------------------------------------------------

 * Bright Zone !

Segment Leq : 73.29 dBA


Results segment # 2: QEW SBound (day)
-----------------------------------

Source height = 1.97 m
```

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	8.00	7.28	7.28

ROAD (0.00 + 71.37 + 0.00) = 71.37 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	80.11	0.00	-5.72	-3.01	0.00	0.00	-0.04	71.33*
-90	0	0.00	80.11	0.00	-5.72	-3.01	0.00	0.00	0.00	71.37

* Bright Zone !

Segment Leq : 71.37 dBA

Total Leq All Segments: 75.45 dBA

Results segment # 1: QEW Nbound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	8.00	6.89	6.89

ROAD (0.00 + 73.29 + 0.00) = 73.29 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	80.11	0.00	-3.80	-3.01	0.00	0.00	-0.06	73.24*
-90	0	0.00	80.11	0.00	-3.80	-3.01	0.00	0.00	0.00	73.29

* Bright Zone !

Segment Leq : 73.29 dBA

Results segment # 2: QEW SBound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	8.00	7.28	7.28

ROAD (0.00 + 71.37 + 0.00) = 71.37 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	80.11	0.00	-5.72	-3.01	0.00	0.00	-0.04	71.33*
-90	0	0.00	80.11	0.00	-5.72	-3.01	0.00	0.00	0.00	71.37

* Bright Zone !

Segment Leq : 71.37 dBA

Total Leq All Segments: 75.45 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 75.45
(NIGHT): 75.45

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 18:06:50
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: dsouth.te Time Period: Day/Night 16/8 hours
Description: Building D South Facade Floor 1

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

Car traffic volume : 22572/2508 veh/TimePeriod *
Medium truck volume : 557/62 veh/TimePeriod *
Heavy truck volume : 371/41 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16890
Percentage of Annual Growth : 2.00
Number of Years of Growth : 22.00
Medium Truck % of Total Volume : 2.37
Heavy Truck % of Total Volume : 1.58
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Lundys Lane (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 80.00 / 80.00 m
Receiver height : 2.00 / 2.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 23750
Percentage of Annual Growth : 2.00

```
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 2: QEW NBound (day/night)
---------------------------------------------
Angle1   Angle2           :   0.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  58.00 / 58.00  m
Receiver height           :   2.00 / 2.00   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :   0.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :  32.00 / 32.00  m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Road data, segment # 3: QEW Sbound (day/night)
---------------------------------------------
Car traffic volume  : 20375/10186 veh/TimePeriod  *
Medium truck volume :  1273/637   veh/TimePeriod  *
Heavy truck volume  :  3820/1910  veh/TimePeriod  *
Posted speed limit  :   100 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  23750
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 3: QEW Sbound (day/night)
---------------------------------------------
Angle1   Angle2           :   0.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  78.00 / 78.00  m
Receiver height           :   2.00 / 2.00   m
```

```
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :   0.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :  52.00 / 52.00  m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Results segment # 1: Lundys Lane (day)
--------------------------------------

Source height = 1.12 m

ROAD (0.00 + 60.11 + 0.00) = 60.11 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.00  67.38   0.00  -7.27   0.00   0.00   0.00   0.00  60.11
-------------------------------------------------------------------------------

Segment Leq : 60.11 dBA


Results segment # 2: QEW NBound (day)
-------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        2.00 !       -3.53 !        -3.53

ROAD (0.00 + 56.04 + 0.00) = 56.04 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     90   0.00  79.60   0.00  -5.87  -3.01   0.00   0.00 -14.67  56.04
-------------------------------------------------------------------------------

Segment Leq : 56.04 dBA


Results segment # 3: QEW Sbound (day)
-------------------------------------

Source height = 1.97 m
```

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	2.00	-4.69	-4.69

ROAD (0.00 + 54.28 + 0.00) = 54.28 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	79.60	0.00	-7.16	-3.01	0.00	0.00	-15.15	54.28

Segment Leq : 54.28 dBA

Total Leq All Segments: 62.29 dBA

Results segment # 1: Lundys Lane (night)

Source height = 1.12 m

ROAD (0.00 + 53.57 + 0.00) = 53.57 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	60.84	0.00	-7.27	0.00	0.00	0.00	0.00	53.57

Segment Leq : 53.57 dBA

Results segment # 2: QEW NBound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	2.00	-3.53	-3.53

ROAD (0.00 + 56.04 + 0.00) = 56.04 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	79.60	0.00	-5.87	-3.01	0.00	0.00	-14.67	56.04

Segment Leq : 56.04 dBA

Results segment # 3: QEW Sbound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	2.00	-4.69	-4.69

ROAD (0.00 + 54.28 + 0.00) = 54.28 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	79.60	0.00	-7.16	-3.01	0.00	0.00	-15.15	54.28

Segment Leq : 54.28 dBA

Total Leq All Segments: 59.53 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 62.29
(NIGHT): 59.53

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 18:07:05
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: d2south.te Time Period: Day/Night 16/8 hours
Description: Building D South Facade Floor 2

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

Car traffic volume : 22572/2508 veh/TimePeriod *
Medium truck volume : 557/62 veh/TimePeriod *
Heavy truck volume : 371/41 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16890
Percentage of Annual Growth : 2.00
Number of Years of Growth : 22.00
Medium Truck % of Total Volume : 2.37
Heavy Truck % of Total Volume : 1.58
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Lundys Lane (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 80.00 / 80.00 m
Receiver height : 5.00 / 5.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 23750
Percentage of Annual Growth : 2.00

```
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 2: QEW NBound (day/night)
---------------------------------------------
Angle1   Angle2           :   0.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  58.00 / 58.00  m
Receiver height           :   5.00 / 5.00   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :   0.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :  32.00 / 32.00  m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Road data, segment # 3: QEW Sbound (day/night)
---------------------------------------------
Car traffic volume  : 20375/10186 veh/TimePeriod  *
Medium truck volume :  1273/637   veh/TimePeriod  *
Heavy truck volume  :  3820/1910  veh/TimePeriod  *
Posted speed limit  :   100 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  23750
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 3: QEW Sbound (day/night)
---------------------------------------------
Angle1   Angle2           :   0.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  78.00 / 78.00  m
Receiver height           :   5.00 / 5.00   m
```

```
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :   0.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :  52.00 / 52.00  m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Results segment # 1: Lundys Lane (day)
--------------------------------------

Source height = 1.12 m

ROAD (0.00 + 60.11 + 0.00) = 60.11 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.00  67.38   0.00  -7.27   0.00   0.00   0.00   0.00  60.11
-------------------------------------------------------------------------------

Segment Leq : 60.11 dBA


Results segment # 2: QEW NBound (day)
-------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        5.00 !       -2.19 !        -2.19

ROAD (0.00 + 57.64 + 0.00) = 57.64 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     90   0.00  79.60   0.00  -5.87  -3.01   0.00   0.00 -13.07  57.64
-------------------------------------------------------------------------------

Segment Leq : 57.64 dBA


Results segment # 3: QEW Sbound (day)
-------------------------------------

Source height = 1.97 m
```

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	5.00	-3.69	-3.69

ROAD (0.00 + 55.27 + 0.00) = 55.27 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	79.60	0.00	-7.16	-3.01	0.00	0.00	-14.16	55.27

Segment Leq : 55.27 dBA

Total Leq All Segments: 62.88 dBA

Results segment # 1: Lundys Lane (night)

Source height = 1.12 m

ROAD (0.00 + 53.57 + 0.00) = 53.57 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	60.84	0.00	-7.27	0.00	0.00	0.00	0.00	53.57

Segment Leq : 53.57 dBA

Results segment # 2: QEW NBound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	5.00	-2.19	-2.19

ROAD (0.00 + 57.65 + 0.00) = 57.65 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	79.60	0.00	-5.87	-3.01	0.00	0.00	-13.07	57.65

Segment Leq : 57.65 dBA

Results segment # 3: QEW Sbound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	5.00	-3.69	-3.69

ROAD (0.00 + 55.27 + 0.00) = 55.27 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	79.60	0.00	-7.16	-3.01	0.00	0.00	-14.16	55.27

Segment Leq : 55.27 dBA

Total Leq All Segments: 60.59 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 62.88
(NIGHT): 60.59

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 17:23:28
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: d3south.te Time Period: Day/Night 16/8 hours
Description: Building D South Facade Floor 3

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

Car traffic volume : 22572/2508 veh/TimePeriod *
Medium truck volume : 557/62 veh/TimePeriod *
Heavy truck volume : 371/41 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16890
Percentage of Annual Growth : 2.00
Number of Years of Growth : 22.00
Medium Truck % of Total Volume : 2.37
Heavy Truck % of Total Volume : 1.58
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Lundys Lane (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 80.00 / 80.00 m
Receiver height : 8.00 / 8.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 23750
Percentage of Annual Growth : 2.00

```
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 2: QEW NBound (day/night)
---------------------------------------------
Angle1   Angle2           :   0.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  58.00 / 58.00  m
Receiver height           :   8.00 / 8.00   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :   0.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :  32.00 / 32.00  m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Road data, segment # 3: QEW Sbound (day/night)
---------------------------------------------
Car traffic volume  : 20375/10186 veh/TimePeriod  *
Medium truck volume :  1273/637   veh/TimePeriod  *
Heavy truck volume  :  3820/1910  veh/TimePeriod  *
Posted speed limit  :   100 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  23750
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 3: QEW Sbound (day/night)
---------------------------------------------
Angle1   Angle2           :   0.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  78.00 / 78.00  m
Receiver height           :   8.00 / 8.00   m
```

```
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :   0.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :  52.00 / 52.00  m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Results segment # 1: Lundys Lane (day)
--------------------------------------

Source height = 1.12 m

ROAD (0.00 + 60.11 + 0.00) = 60.11 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.00  67.38   0.00  -7.27   0.00   0.00   0.00   0.00  60.11
-------------------------------------------------------------------------------

Segment Leq : 60.11 dBA


Results segment # 2: QEW NBound (day)
-------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        8.00 !       -0.85 !        -0.85

ROAD (0.00 + 59.60 + 0.00) = 59.60 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     90   0.00  79.60   0.00  -5.87  -3.01   0.00   0.00 -11.11  59.60
-------------------------------------------------------------------------------

Segment Leq : 59.60 dBA


Results segment # 3: QEW Sbound (day)
-------------------------------------

Source height = 1.97 m
```

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	8.00	-2.69	-2.69

ROAD (0.00 + 56.38 + 0.00) = 56.38 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	79.60	0.00	-7.16	-3.01	0.00	0.00	-13.04	56.38

Segment Leq : 56.38 dBA

Total Leq All Segments: 63.75 dBA

Results segment # 1: Lundys Lane (night)

Source height = 1.12 m

ROAD (0.00 + 53.57 + 0.00) = 53.57 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	60.84	0.00	-7.27	0.00	0.00	0.00	0.00	53.57

Segment Leq : 53.57 dBA

Results segment # 2: QEW NBound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	8.00	-0.85	-0.85

ROAD (0.00 + 59.60 + 0.00) = 59.60 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	79.60	0.00	-5.87	-3.01	0.00	0.00	-11.11	59.60

Segment Leq : 59.60 dBA

Results segment # 3: QEW Sbound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	8.00	-2.69	-2.69

ROAD (0.00 + 56.39 + 0.00) = 56.39 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	79.60	0.00	-7.16	-3.01	0.00	0.00	-13.04	56.39

Segment Leq : 56.39 dBA

Total Leq All Segments: 61.97 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 63.75
(NIGHT): 61.97

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 17:23:46
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: dwest.te Time Period: Day/Night 16/8 hours
Description: Building D West Facade Floor 1

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

Car traffic volume : 21696/2411 veh/TimePeriod *
Medium truck volume : 535/59 veh/TimePeriod *
Heavy truck volume : 357/40 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16890
Percentage of Annual Growth : 2.00
Number of Years of Growth : 20.00
Medium Truck % of Total Volume : 2.37
Heavy Truck % of Total Volume : 1.58
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Lundys Lane (day/night)

Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 75.00 / 75.00 m
Receiver height : 2.00 / 2.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 22911/11455 veh/TimePeriod
Medium truck volume : 1432/716 veh/TimePeriod
Heavy truck volume : 4296/2148 veh/TimePeriod
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: QEW NBound (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)

```
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  40.00 / 40.00  m
Receiver height           :   2.00 / 2.00   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :   2.50 / 2.50   m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Road data, segment # 3: QEW Sbound (day/night)
----------------------------------------------
Car traffic volume  : 20375/10186 veh/TimePeriod  *
Medium truck volume :  1273/637   veh/TimePeriod  *
Heavy truck volume  :  3820/1910  veh/TimePeriod  *
Posted speed limit  :   100 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  23750
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 3: QEW Sbound (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  60.00 / 60.00  m
Receiver height           :   2.00 / 2.00   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :   2.50 / 2.50   m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00
```

Results segment # 1: Lundys Lane (day)

Source height = 1.12 m

ROAD (0.00 + 57.21 + 0.00) = 57.21 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	67.21	0.00	-6.99	-3.01	0.00	0.00	0.00	57.21

Segment Leq : 57.21 dBA

Results segment # 2: QEW NBound (day)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	2.00	1.37	1.37

ROAD (0.00 + 64.21 + 0.00) = 64.21 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	80.11	0.00	-4.26	0.00	0.00	0.00	-11.63	64.21

Segment Leq : 64.21 dBA

Results segment # 3: QEW Sbound (day)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	2.00	1.58	1.58

ROAD (0.00 + 62.79 + 0.00) = 62.79 dBA

```
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.00  79.60   0.00  -6.02   0.00   0.00   0.00 -10.79  62.79
-------------------------------------------------------------------------

Segment Leq : 62.79 dBA

Total Leq All Segments: 67.04 dBA


Results segment # 1: Lundys Lane (night)
----------------------------------------

Source height = 1.12 m

ROAD (0.00 + 50.69 + 0.00) = 50.69 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90      0   0.00  60.69   0.00  -6.99  -3.01   0.00   0.00   0.00  50.69
-------------------------------------------------------------------------

Segment Leq : 50.69 dBA


Results segment # 2: QEW NBound (night)
---------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        2.00 !        1.37 !         1.37

ROAD (0.00 + 64.21 + 0.00) = 64.21 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.00  80.11   0.00  -4.26   0.00   0.00   0.00 -11.63  64.21
-------------------------------------------------------------------------

Segment Leq : 64.21 dBA


Results segment # 3: QEW Sbound (night)
---------------------------------------

Source height = 1.97 m
```

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	2.00	1.58	1.58

ROAD (0.00 + 62.79 + 0.00) = 62.79 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	79.60	0.00	-6.02	0.00	0.00	0.00	-10.79	62.79

Segment Leq : 62.79 dBA

Total Leq All Segments: 66.68 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 67.04
(NIGHT): 66.68

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 17:23:59
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: d2west.te Time Period: Day/Night 16/8 hours
Description: Building D West Facade Floor 2

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

Car traffic volume : 21696/2411 veh/TimePeriod *
Medium truck volume : 535/59 veh/TimePeriod *
Heavy truck volume : 357/40 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16890
Percentage of Annual Growth : 2.00
Number of Years of Growth : 20.00
Medium Truck % of Total Volume : 2.37
Heavy Truck % of Total Volume : 1.58
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Lundys Lane (day/night)

Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 75.00 / 75.00 m
Receiver height : 5.00 / 5.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 23750
Percentage of Annual Growth : 2.00

```
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 2: QEW NBound (day/night)
---------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  40.00 / 40.00  m
Receiver height           :   5.00 / 5.00   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :   2.50 / 2.50   m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Road data, segment # 3: QEW Sbound (day/night)
---------------------------------------------
Car traffic volume  : 20375/10186 veh/TimePeriod  *
Medium truck volume :  1273/637   veh/TimePeriod  *
Heavy truck volume  :  3820/1910  veh/TimePeriod  *
Posted speed limit  :   100 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  23750
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 3: QEW Sbound (day/night)
---------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  60.00 / 60.00  m
Receiver height           :   5.00 / 5.00   m
```

```
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :   2.50 / 2.50   m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Results segment # 1: Lundys Lane (day)
--------------------------------------

Source height = 1.12 m

ROAD (0.00 + 57.21 + 0.00) = 57.21 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90      0   0.00  67.21   0.00  -6.99  -3.01   0.00   0.00   0.00  57.21
-------------------------------------------------------------------------------

Segment Leq : 57.21 dBA


Results segment # 2: QEW NBound (day)
-------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        5.00 !        4.19 !         4.19

ROAD (0.00 + 75.34 + 0.00) = 75.34 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.00  79.60   0.00  -4.26   0.00   0.00   0.00  -0.39  74.95*
   -90     90   0.00  79.60   0.00  -4.26   0.00   0.00   0.00   0.00  75.34
-------------------------------------------------------------------------------

 * Bright Zone !

Segment Leq : 75.34 dBA


Results segment # 3: QEW Sbound (day)
```

```
------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        5.00 !        4.46 !         4.46

ROAD (0.00 + 73.57 + 0.00) = 73.57 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.00  79.60   0.00  -6.02   0.00   0.00   0.00  -0.24  73.34*
   -90     90   0.00  79.60   0.00  -6.02   0.00   0.00   0.00   0.00  73.57
-------------------------------------------------------------------------------

 * Bright Zone !

Segment Leq : 73.57 dBA

Total Leq All Segments: 77.59 dBA


Results segment # 1: Lundys Lane (night)
----------------------------------------

Source height = 1.12 m

ROAD (0.00 + 50.69 + 0.00) = 50.69 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90      0   0.00  60.69   0.00  -6.99  -3.01   0.00   0.00   0.00  50.69
-------------------------------------------------------------------------------

Segment Leq : 50.69 dBA


Results segment # 2: QEW NBound (night)
---------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        5.00 !        4.19 !         4.19
```

ROAD (0.00 + 75.34 + 0.00) = 75.34 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	79.60	0.00	-4.26	0.00	0.00	0.00	-0.39	74.95*
-90	90	0.00	79.60	0.00	-4.26	0.00	0.00	0.00	0.00	75.34

* Bright Zone !

Segment Leq : 75.34 dBA

Results segment # 3: QEW Sbound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	5.00	4.46	4.46

ROAD (0.00 + 73.57 + 0.00) = 73.57 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	79.60	0.00	-6.02	0.00	0.00	0.00	-0.24	73.34*
-90	90	0.00	79.60	0.00	-6.02	0.00	0.00	0.00	0.00	73.57

* Bright Zone !

Segment Leq : 73.57 dBA

Total Leq All Segments: 77.56 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 77.59
(NIGHT): 77.56

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 17:24:09
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: d3west.te Time Period: Day/Night 16/8 hours
Description: Building D West Facade Floor 3

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

Car traffic volume : 21696/2411 veh/TimePeriod *
Medium truck volume : 535/59 veh/TimePeriod *
Heavy truck volume : 357/40 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16890
Percentage of Annual Growth : 2.00
Number of Years of Growth : 20.00
Medium Truck % of Total Volume : 2.37
Heavy Truck % of Total Volume : 1.58
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Lundys Lane (day/night)

Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 75.00 / 75.00 m
Receiver height : 8.00 / 8.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 23750
Percentage of Annual Growth : 2.00

```
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 2: QEW NBound (day/night)
---------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  40.00 / 40.00  m
Receiver height           :   8.00 / 8.00   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :   2.50 / 2.50   m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Road data, segment # 3: QEW Sbound (day/night)
---------------------------------------------
Car traffic volume  : 20375/10186 veh/TimePeriod  *
Medium truck volume :  1273/637   veh/TimePeriod  *
Heavy truck volume  :  3820/1910  veh/TimePeriod  *
Posted speed limit  :   100 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  23750
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 3: QEW Sbound (day/night)
---------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  60.00 / 60.00  m
Receiver height           :   8.00 / 8.00   m
```

```
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :   2.50 / 2.50   m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Results segment # 1: Lundys Lane (day)
--------------------------------------

Source height = 1.12 m

ROAD (0.00 + 57.21 + 0.00) = 57.21 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90      0   0.00  67.21   0.00  -6.99  -3.01   0.00   0.00   0.00  57.21
-------------------------------------------------------------------------------

Segment Leq : 57.21 dBA


Results segment # 2: QEW NBound (day)
-------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        8.00 !        7.00 !         7.00

ROAD (0.00 + 75.34 + 0.00) = 75.34 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.00  79.60   0.00  -4.26   0.00   0.00   0.00  -0.05  75.28*
   -90     90   0.00  79.60   0.00  -4.26   0.00   0.00   0.00   0.00  75.34
-------------------------------------------------------------------------------

 * Bright Zone !

Segment Leq : 75.34 dBA


Results segment # 3: QEW Sbound (day)
```

```
-------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
-----------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        8.00 !        7.33 !         7.33

ROAD (0.00 + 73.57 + 0.00) = 73.57 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.00  79.60   0.00  -6.02   0.00   0.00   0.00  -0.04  73.53*
   -90     90   0.00  79.60   0.00  -6.02   0.00   0.00   0.00   0.00  73.57
-------------------------------------------------------------------------------

 * Bright Zone !

Segment Leq : 73.57 dBA

Total Leq All Segments: 77.59 dBA


Results segment # 1: Lundys Lane (night)
---------------------------------------

Source height = 1.12 m

ROAD (0.00 + 50.69 + 0.00) = 50.69 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90      0   0.00  60.69   0.00  -6.99  -3.01   0.00   0.00   0.00  50.69
-------------------------------------------------------------------------------

Segment Leq : 50.69 dBA


Results segment # 2: QEW NBound (night)
---------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
-----------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        8.00 !        7.00 !         7.00
```

ROAD (0.00 + 75.34 + 0.00) = 75.34 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	79.60	0.00	-4.26	0.00	0.00	0.00	-0.05	75.28*
-90	90	0.00	79.60	0.00	-4.26	0.00	0.00	0.00	0.00	75.34

* Bright Zone !

Segment Leq : 75.34 dBA

Results segment # 3: QEW Sbound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	8.00	7.33	7.33

ROAD (0.00 + 73.57 + 0.00) = 73.57 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	79.60	0.00	-6.02	0.00	0.00	0.00	-0.04	73.53*
-90	90	0.00	79.60	0.00	-6.02	0.00	0.00	0.00	0.00	73.57

* Bright Zone !

Segment Leq : 73.57 dBA

Total Leq All Segments: 77.56 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 77.59
(NIGHT): 77.56

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 17:24:37
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: eeast.te Time Period: Day/Night 16/8 hours
Description: Building E East Facade Floor 1

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

Car traffic volume : 22572/2508 veh/TimePeriod *
Medium truck volume : 557/62 veh/TimePeriod *
Heavy truck volume : 371/41 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16890
Percentage of Annual Growth : 2.00
Number of Years of Growth : 22.00
Medium Truck % of Total Volume : 2.37
Heavy Truck % of Total Volume : 1.58
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Lundys Lane (day/night)

Angle1 Angle2 : 0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 130.00 / 130.00 m
Receiver height : 2.00 / 2.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Lundys Lane (day)

Source height = 1.12 m

ROAD (0.00 + 54.99 + 0.00) = 54.99 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	67.38	0.00	-9.38	-3.01	0.00	0.00	0.00	54.99

Segment Leq : 54.99 dBA

Total Leq All Segments: 54.99 dBA

Results segment # 1: Lundys Lane (night)

Source height = 1.12 m

ROAD (0.00 + 48.45 + 0.00) = 48.45 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	60.84	0.00	-9.38	-3.01	0.00	0.00	0.00	48.45

Segment Leq : 48.45 dBA

Total Leq All Segments: 48.45 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 54.99
(NIGHT): 48.45

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 17:24:51
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: e2east.te Time Period: Day/Night 16/8 hours
Description: Building E East Facade Floor 2

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

Car traffic volume : 22572/2508 veh/TimePeriod *
Medium truck volume : 557/62 veh/TimePeriod *
Heavy truck volume : 371/41 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16890
Percentage of Annual Growth : 2.00
Number of Years of Growth : 22.00
Medium Truck % of Total Volume : 2.37
Heavy Truck % of Total Volume : 1.58
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Lundys Lane (day/night)

Angle1 Angle2 : 0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 130.00 / 130.00 m
Receiver height : 5.00 / 5.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Lundys Lane (day)

Source height = 1.12 m

ROAD (0.00 + 54.99 + 0.00) = 54.99 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	67.38	0.00	-9.38	-3.01	0.00	0.00	0.00	54.99

Segment Leq : 54.99 dBA

Total Leq All Segments: 54.99 dBA

Results segment # 1: Lundys Lane (night)

Source height = 1.12 m

ROAD (0.00 + 48.45 + 0.00) = 48.45 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	60.84	0.00	-9.38	-3.01	0.00	0.00	0.00	48.45

Segment Leq : 48.45 dBA

Total Leq All Segments: 48.45 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 54.99
(NIGHT): 48.45

STAMSON 5.0 SUMMARY REPORT Date: 30-08-2023 15:46:21
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: e3east.te Time Period: Day/Night 16/8 hours
Description: Building E East Facade Floor 3

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

Car traffic volume : 25136/2793 veh/TimePeriod *
Medium truck volume : 620/69 veh/TimePeriod *
Heavy truck volume : 413/46 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16890
Percentage of Annual Growth : 2.50
Number of Years of Growth : 22.00
Medium Truck % of Total Volume : 2.37
Heavy Truck % of Total Volume : 1.58
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Lundys Lane (day/night)

Angle1 Angle2 : 0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 130.00 / 130.00 m
Receiver height : 8.00 / 8.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Result summary (day)
---

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Lundys Lane	1.12	55.46	55.46
Total			55.46 dBA

Result summary (night)

---

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Lundys Lane	1.12	48.93	48.93
Total			48.93 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 55.46
(NIGHT): 48.93

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 18:09:48
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: enorth.te Time Period: Day/Night 16/8 hours
Description: Building E North Facade Floor 1

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 23750
Percentage of Annual Growth : 2.00
Number of Years of Growth : 24.00
Medium Truck % of Total Volume : 5.00
Heavy Truck % of Total Volume : 15.00
Day (16 hrs) % of Total Volume : 66.67

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

Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 36.00 / 36.00 m
Receiver height : 2.00 / 2.00 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 0.00 deg
Barrier height : 3.00 m
Elevation : 10.00 m
Barrier receiver distance : 4.50 / 4.50 m
Source elevation : -10.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h

```
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  23750
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 2: QEW SBound (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  56.00 / 56.00  m
Receiver height           :   2.00 / 2.00   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 0.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :   4.50 / 4.50   m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


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

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        2.00 !        0.75 !         0.75

ROAD (0.00 + 60.78 + 0.00) = 60.78 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90      0   0.00  79.60   0.00  -3.80  -3.01   0.00   0.00 -12.01  60.78
-------------------------------------------------------------------------------

Segment Leq : 60.78 dBA
```

Results segment # 2: QEW SBound (day)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	2.00	1.19	1.19

ROAD (0.00 + 60.24 + 0.00) = 60.24 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	79.60	0.00	-5.72	-3.01	0.00	0.00	-10.63	60.24

Segment Leq : 60.24 dBA

Total Leq All Segments: 63.53 dBA

Results segment # 1: QEW Nbound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	2.00	0.75	0.75

ROAD (0.00 + 60.78 + 0.00) = 60.78 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	79.60	0.00	-3.80	-3.01	0.00	0.00	-12.01	60.78

Segment Leq : 60.78 dBA

Results segment # 2: QEW SBound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	2.00	1.19	1.19

ROAD (0.00 + 60.24 + 0.00) = 60.24 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	79.60	0.00	-5.72	-3.01	0.00	0.00	-10.63	60.24

Segment Leq : 60.24 dBA

Total Leq All Segments: 63.53 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 63.53
(NIGHT): 63.53

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 17:25:47
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: e2north.te Time Period: Day/Night 16/8 hours
Description: Building E North Facade Floor 2

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 23750
Percentage of Annual Growth : 2.00
Number of Years of Growth : 24.00
Medium Truck % of Total Volume : 5.00
Heavy Truck % of Total Volume : 15.00
Day (16 hrs) % of Total Volume : 66.67

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

Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 36.00 / 36.00 m
Receiver height : 5.00 / 5.00 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 0.00 deg
Barrier height : 3.00 m
Elevation : 10.00 m
Barrier receiver distance : 4.50 / 4.50 m
Source elevation : -10.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h

```
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  23750
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 2: QEW SBound (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  56.00 / 56.00  m
Receiver height           :   5.00 / 5.00   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 0.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :   4.50 / 4.50   m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


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

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        5.00 !        3.37 !         3.37

ROAD (0.00 + 72.78 + 0.00) = 72.78 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90      0   0.00  79.60   0.00  -3.80  -3.01   0.00   0.00  -4.49  68.29*
   -90      0   0.00  79.60   0.00  -3.80  -3.01   0.00   0.00   0.00  72.78
-------------------------------------------------------------------------------
```

```
 * Bright Zone !

Segment Leq : 72.78 dBA


Results segment # 2: QEW SBound (day)
-------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        5.00 !        3.95 !         3.95

ROAD (0.00 + 70.86 + 0.00) = 70.86 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90      0   0.00  79.60   0.00  -5.72  -3.01   0.00   0.00  -1.00  69.87*
   -90      0   0.00  79.60   0.00  -5.72  -3.01   0.00   0.00   0.00  70.86
-------------------------------------------------------------------------------

 * Bright Zone !

Segment Leq : 70.86 dBA

Total Leq All Segments: 74.94 dBA


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

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        5.00 !        3.37 !         3.37

ROAD (0.00 + 72.78 + 0.00) = 72.78 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90      0   0.00  79.60   0.00  -3.80  -3.01   0.00   0.00  -4.49  68.29*
   -90      0   0.00  79.60   0.00  -3.80  -3.01   0.00   0.00   0.00  72.78
-------------------------------------------------------------------------------
```

* Bright Zone !

Segment Leq : 72.78 dBA

Results segment # 2: QEW SBound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	5.00	3.95	3.95

ROAD (0.00 + 70.86 + 0.00) = 70.86 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	79.60	0.00	-5.72	-3.01	0.00	0.00	-1.00	69.87*
-90	0	0.00	79.60	0.00	-5.72	-3.01	0.00	0.00	0.00	70.86

* Bright Zone !

Segment Leq : 70.86 dBA

Total Leq All Segments: 74.94 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 74.94
(NIGHT): 74.94

STAMSON 5.0 SUMMARY REPORT Date: 30-08-2023 15:50:35
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: e3north.te Time Period: Day/Night 16/8 hours
Description: Building E North Facade Floor 3

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

Car traffic volume : 22912/11454 veh/TimePeriod *
Medium truck volume : 1432/716 veh/TimePeriod *
Heavy truck volume : 4296/2148 veh/TimePeriod *
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 23750
Percentage of Annual Growth : 2.50
Number of Years of Growth : 24.00
Medium Truck % of Total Volume : 5.00
Heavy Truck % of Total Volume : 15.00
Day (16 hrs) % of Total Volume : 66.67

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

Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 36.00 / 36.00 m
Receiver height : 8.00 / 8.00 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 0.00 deg
Barrier height : 3.00 m
Elevation : 0.00 m
Barrier receiver distance : 20.00 / 20.00 m
Source elevation : -5.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

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

Car traffic volume : 22911/11455 veh/TimePeriod
Medium truck volume : 1432/716 veh/TimePeriod
Heavy truck volume : 4296/2148 veh/TimePeriod
Posted speed limit : 100 km/h

```
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 2: QEW SBound (day/night)
-------------------------------------------
Angle1   Angle2           : -90.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  56.00 / 56.00  m
Receiver height           :   8.00 / 8.00   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 0.00 deg
Barrier height            :   3.00 m
Elevation                 :   0.00 m
Barrier receiver distance :  40.00 / 40.00  m
Source elevation          :  -5.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Result summary (day)
--------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.QEW Nbound       !     1.97 !    66.61 !    66.61
 2.QEW SBound       !     1.97 !    61.16 !    61.16
--------------------+----------+----------+----------
                      Total                   67.70 dBA


Result summary (night)
----------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.QEW Nbound       !     1.97 !    66.61 !    66.61
 2.QEW SBound       !     1.97 !    61.16 !    61.16
--------------------+----------+----------+----------
                      Total                   67.70 dBA
```

TOTAL Leq FROM ALL SOURCES (DAY): 67.70
(NIGHT): 67.70

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 18:10:08
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: esouth.te Time Period: Day/Night 16/8 hours
Description: Building E South Facade Floor 1

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

Car traffic volume : 22572/2508 veh/TimePeriod *
Medium truck volume : 557/62 veh/TimePeriod *
Heavy truck volume : 371/41 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16890
Percentage of Annual Growth : 2.00
Number of Years of Growth : 22.00
Medium Truck % of Total Volume : 2.37
Heavy Truck % of Total Volume : 1.58
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Lundys Lane (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 85.00 / 85.00 m
Receiver height : 2.00 / 2.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 23750
Percentage of Annual Growth : 2.00

```
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 2: QEW NBound (day/night)
---------------------------------------------
Angle1   Angle2           :   0.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  46.00 / 46.00  m
Receiver height           :   2.00 / 2.00   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :   0.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :  15.00 / 15.00  m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Road data, segment # 3: QEW Sbound (day/night)
---------------------------------------------
Car traffic volume  : 20375/10186 veh/TimePeriod  *
Medium truck volume :  1273/637   veh/TimePeriod  *
Heavy truck volume  :  3820/1910  veh/TimePeriod  *
Posted speed limit  :   100 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  23750
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 3: QEW Sbound (day/night)
---------------------------------------------
Angle1   Angle2           :   0.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  66.00 / 66.00  m
Receiver height           :   2.00 / 2.00   m
```

```
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :   0.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :  15.00 / 15.00  m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Results segment # 1: Lundys Lane (day)
--------------------------------------

Source height = 1.12 m

ROAD (0.00 + 59.85 + 0.00) = 59.85 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.00  67.38   0.00  -7.53   0.00   0.00   0.00   0.00  59.85
-------------------------------------------------------------------------------

Segment Leq : 59.85 dBA


Results segment # 2: QEW NBound (day)
-------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        2.00 !       -1.27 !        -1.27

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
-------------------------------------------------------------------------------
     0     90   0.00  79.60   0.00  -4.87  -3.01   0.00   0.00 -13.05  58.66
-------------------------------------------------------------------------------

Segment Leq : 58.66 dBA


Results segment # 3: QEW Sbound (day)
-------------------------------------

Source height = 1.97 m
```

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	2.00	-0.28	-0.28

ROAD (0.00 + 59.05 + 0.00) = 59.05 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	79.60	0.00	-6.43	-3.01	0.00	0.00	-11.10	59.05

Segment Leq : 59.05 dBA

Total Leq All Segments: 63.99 dBA

Results segment # 1: Lundys Lane (night)

Source height = 1.12 m

ROAD (0.00 + 53.31 + 0.00) = 53.31 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	60.84	0.00	-7.53	0.00	0.00	0.00	0.00	53.31

Segment Leq : 53.31 dBA

Results segment # 2: QEW NBound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	2.00	-1.27	-1.27

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
0	90	0.00	79.60	0.00	-4.87	-3.01	0.00	0.00	-13.05	58.66

Segment Leq : 58.66 dBA

Results segment # 3: QEW Sbound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	2.00	-0.28	-0.28

ROAD (0.00 + 59.05 + 0.00) = 59.05 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	79.60	0.00	-6.43	-3.01	0.00	0.00	-11.10	59.05

Segment Leq : 59.05 dBA

Total Leq All Segments: 62.44 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 63.99
(NIGHT): 62.44

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 17:26:34
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: e2south.te Time Period: Day/Night 16/8 hours
Description: Building E South Facade Floor 2

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

Car traffic volume : 22572/2508 veh/TimePeriod *
Medium truck volume : 557/62 veh/TimePeriod *
Heavy truck volume : 371/41 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16890
Percentage of Annual Growth : 2.00
Number of Years of Growth : 22.00
Medium Truck % of Total Volume : 2.37
Heavy Truck % of Total Volume : 1.58
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Lundys Lane (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 85.00 / 85.00 m
Receiver height : 5.00 / 5.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 23750
Percentage of Annual Growth : 2.00

```
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 2: QEW NBound (day/night)
---------------------------------------------
Angle1   Angle2           :   0.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  46.00 / 46.00  m
Receiver height           :   5.00 / 5.00   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :   0.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :  15.00 / 15.00  m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Road data, segment # 3: QEW Sbound (day/night)
---------------------------------------------
Car traffic volume  : 20375/10186 veh/TimePeriod  *
Medium truck volume :  1273/637   veh/TimePeriod  *
Heavy truck volume  :  3820/1910  veh/TimePeriod  *
Posted speed limit  :   100 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  23750
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 3: QEW Sbound (day/night)
---------------------------------------------
Angle1   Angle2           :   0.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  66.00 / 66.00  m
Receiver height           :   5.00 / 5.00   m
```

```
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :   0.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :  15.00 / 15.00  m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Results segment # 1: Lundys Lane (day)
--------------------------------------

Source height = 1.12 m

ROAD (0.00 + 59.85 + 0.00) = 59.85 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.00  67.38   0.00  -7.53   0.00   0.00   0.00   0.00  59.85
-------------------------------------------------------------------------------

Segment Leq : 59.85 dBA


Results segment # 2: QEW NBound (day)
-------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        5.00 !        0.75 !         0.75

ROAD (0.00 + 62.52 + 0.00) = 62.52 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     90   0.00  79.60   0.00  -4.87  -3.01   0.00   0.00  -9.19  62.52
-------------------------------------------------------------------------------

Segment Leq : 62.52 dBA


Results segment # 3: QEW Sbound (day)
-------------------------------------

Source height = 1.97 m
```

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	5.00	2.04	2.04

ROAD (0.00 + 64.04 + 0.00) = 64.04 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	79.60	0.00	-6.43	-3.01	0.00	0.00	-6.11	64.04

Segment Leq : 64.04 dBA

Total Leq All Segments: 67.23 dBA

Results segment # 1: Lundys Lane (night)

Source height = 1.12 m

ROAD (0.00 + 53.31 + 0.00) = 53.31 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	60.84	0.00	-7.53	0.00	0.00	0.00	0.00	53.31

Segment Leq : 53.31 dBA

Results segment # 2: QEW NBound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	5.00	0.75	0.75

ROAD (0.00 + 62.52 + 0.00) = 62.52 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	79.60	0.00	-4.87	-3.01	0.00	0.00	-9.19	62.52

Segment Leq : 62.52 dBA

Results segment # 3: QEW Sbound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	5.00	2.04	2.04

ROAD (0.00 + 64.04 + 0.00) = 64.04 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	79.60	0.00	-6.43	-3.01	0.00	0.00	-6.11	64.04

Segment Leq : 64.04 dBA

Total Leq All Segments: 66.57 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 67.23
(NIGHT): 66.57

STAMSON 5.0 SUMMARY REPORT Date: 30-08-2023 15:49:38
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: e3north.te Time Period: Day/Night 16/8 hours
Description: Building E South Facade Floor 3

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

Car traffic volume : 22912/11454 veh/TimePeriod *
Medium truck volume : 1432/716 veh/TimePeriod *
Heavy truck volume : 4296/2148 veh/TimePeriod *
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 23750
Percentage of Annual Growth : 2.50
Number of Years of Growth : 24.00
Medium Truck % of Total Volume : 5.00
Heavy Truck % of Total Volume : 15.00
Day (16 hrs) % of Total Volume : 66.67

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

Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 36.00 / 36.00 m
Receiver height : 8.00 / 8.00 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 0.00 deg
Barrier height : 3.00 m
Elevation : 0.00 m
Barrier receiver distance : 20.00 / 20.00 m
Source elevation : -5.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

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

Car traffic volume : 22911/11455 veh/TimePeriod
Medium truck volume : 1432/716 veh/TimePeriod
Heavy truck volume : 4296/2148 veh/TimePeriod
Posted speed limit : 100 km/h

```
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 2: QEW SBound (day/night)
-------------------------------------------
Angle1   Angle2           : -90.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  56.00 / 56.00  m
Receiver height           :   8.00 / 8.00   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 0.00 deg
Barrier height            :   3.00 m
Elevation                 :   0.00 m
Barrier receiver distance :  40.00 / 40.00  m
Source elevation          :  -5.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Result summary (day)
--------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.QEW Nbound       !     1.97 !    66.61 !    66.61
 2.QEW SBound       !     1.97 !    61.16 !    61.16
--------------------+----------+----------+----------
                      Total                   67.70 dBA


Result summary (night)
----------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.QEW Nbound       !     1.97 !    66.61 !    66.61
 2.QEW SBound       !     1.97 !    61.16 !    61.16
--------------------+----------+----------+----------
                      Total                   67.70 dBA
```

TOTAL Leq FROM ALL SOURCES (DAY): 67.70
(NIGHT): 67.70

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 17:26:55
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: ewest.te Time Period: Day/Night 16/8 hours
Description: Building E West Facade Floor 1

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

Car traffic volume : 21696/2411 veh/TimePeriod *
Medium truck volume : 535/59 veh/TimePeriod *
Heavy truck volume : 357/40 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16890
Percentage of Annual Growth : 2.00
Number of Years of Growth : 20.00
Medium Truck % of Total Volume : 2.37
Heavy Truck % of Total Volume : 1.58
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Lundys Lane (day/night)

Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 80.00 / 80.00 m
Receiver height : 2.00 / 2.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 23750
Percentage of Annual Growth : 2.00

```
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 2: QEW NBound (day/night)
---------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  40.00 / 40.00  m
Receiver height           :   2.00 / 2.00   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :   4.50 / 4.50   m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Road data, segment # 3: QEW Sbound (day/night)
---------------------------------------------
Car traffic volume  : 20375/10186 veh/TimePeriod  *
Medium truck volume :  1273/637   veh/TimePeriod  *
Heavy truck volume  :  3820/1910  veh/TimePeriod  *
Posted speed limit  :   100 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  23750
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 3: QEW Sbound (day/night)
---------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  60.00 / 60.00  m
Receiver height           :   2.00 / 2.00   m
```

```
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :   4.50 / 4.50   m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Results segment # 1: Lundys Lane (day)
--------------------------------------

Source height = 1.12 m

ROAD (0.00 + 56.93 + 0.00) = 56.93 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90      0   0.00  67.21   0.00  -7.27  -3.01   0.00   0.00   0.00  56.93
-------------------------------------------------------------------------------

Segment Leq : 56.93 dBA


Results segment # 2: QEW NBound (day)
-------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        2.00 !        0.87 !         0.87

ROAD (0.00 + 63.69 + 0.00) = 63.69 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.00  79.60   0.00  -4.26   0.00   0.00   0.00 -11.65  63.69
-------------------------------------------------------------------------------

Segment Leq : 63.69 dBA


Results segment # 3: QEW Sbound (day)
-------------------------------------

Source height = 1.97 m
```

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	2.00	1.25	1.25

ROAD (0.00 + 63.13 + 0.00) = 63.13 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	79.60	0.00	-6.02	0.00	0.00	0.00	-10.45	63.13

Segment Leq : 63.13 dBA

Total Leq All Segments: 66.89 dBA

Results segment # 1: Lundys Lane (night)

Source height = 1.12 m

ROAD (0.00 + 50.41 + 0.00) = 50.41 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	60.69	0.00	-7.27	-3.01	0.00	0.00	0.00	50.41

Segment Leq : 50.41 dBA

Results segment # 2: QEW NBound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	2.00	0.87	0.87

ROAD (0.00 + 63.69 + 0.00) = 63.69 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	79.60	0.00	-4.26	0.00	0.00	0.00	-11.65	63.69

Segment Leq : 63.69 dBA

Results segment # 3: QEW Sbound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	2.00	1.25	1.25

ROAD (0.00 + 63.13 + 0.00) = 63.13 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	79.60	0.00	-6.02	0.00	0.00	0.00	-10.45	63.13

Segment Leq : 63.13 dBA

Total Leq All Segments: 66.54 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 66.89
(NIGHT): 66.54

STAMSON 5.0 NORMAL REPORT Date: 08-09-2023 17:27:10
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: e2west.te Time Period: Day/Night 16/8 hours
Description: Building E West Facade Floor 2

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

Car traffic volume : 21696/2411 veh/TimePeriod *
Medium truck volume : 535/59 veh/TimePeriod *
Heavy truck volume : 357/40 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16890
Percentage of Annual Growth : 2.00
Number of Years of Growth : 20.00
Medium Truck % of Total Volume : 2.37
Heavy Truck % of Total Volume : 1.58
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Lundys Lane (day/night)

Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 80.00 / 80.00 m
Receiver height : 5.00 / 5.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 20375/10186 veh/TimePeriod *
Medium truck volume : 1273/637 veh/TimePeriod *
Heavy truck volume : 3820/1910 veh/TimePeriod *
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 23750
Percentage of Annual Growth : 2.00

```
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 2: QEW NBound (day/night)
---------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  40.00 / 40.00  m
Receiver height           :   5.00 / 5.00   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :   4.50 / 4.50   m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Road data, segment # 3: QEW Sbound (day/night)
---------------------------------------------
Car traffic volume  : 20375/10186 veh/TimePeriod  *
Medium truck volume :  1273/637   veh/TimePeriod  *
Heavy truck volume  :  3820/1910  veh/TimePeriod  *
Posted speed limit  :   100 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  23750
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  24.00
    Medium Truck % of Total Volume     :   5.00
    Heavy Truck  % of Total Volume     :  15.00
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 3: QEW Sbound (day/night)
---------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  60.00 / 60.00  m
Receiver height           :   5.00 / 5.00   m
```

```
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :  10.00 m
Barrier receiver distance :   4.50 / 4.50   m
Source elevation          : -10.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Results segment # 1: Lundys Lane (day)
--------------------------------------

Source height = 1.12 m

ROAD (0.00 + 56.93 + 0.00) = 56.93 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90      0   0.00  67.21   0.00  -7.27  -3.01   0.00   0.00   0.00  56.93
-------------------------------------------------------------------------------

Segment Leq : 56.93 dBA


Results segment # 2: QEW NBound (day)
-------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        5.00 !        3.53 !         3.53

ROAD (0.00 + 75.34 + 0.00) = 75.34 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.00  79.60   0.00  -4.26   0.00   0.00   0.00  -3.85  71.49*
   -90     90   0.00  79.60   0.00  -4.26   0.00   0.00   0.00   0.00  75.34
-------------------------------------------------------------------------------

 * Bright Zone !

Segment Leq : 75.34 dBA


Results segment # 3: QEW Sbound (day)
```

```
-------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
-----------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        5.00 !        4.02 !         4.02

ROAD (0.00 + 73.57 + 0.00) = 73.57 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.00  79.60   0.00  -6.02   0.00   0.00   0.00  -0.84  72.74*
   -90     90   0.00  79.60   0.00  -6.02   0.00   0.00   0.00   0.00  73.57
-------------------------------------------------------------------------

 * Bright Zone !

Segment Leq : 73.57 dBA

Total Leq All Segments: 77.59 dBA


Results segment # 1: Lundys Lane (night)
---------------------------------------

Source height = 1.12 m

ROAD (0.00 + 50.41 + 0.00) = 50.41 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90      0   0.00  60.69   0.00  -7.27  -3.01   0.00   0.00   0.00  50.41
-------------------------------------------------------------------------

Segment Leq : 50.41 dBA


Results segment # 2: QEW NBound (night)
---------------------------------------

Source height = 1.97 m

Barrier height for grazing incidence
-----------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.97 !        5.00 !        3.53 !         3.53
```

ROAD (0.00 + 75.34 + 0.00) = 75.34 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	79.60	0.00	-4.26	0.00	0.00	0.00	-3.85	71.49*
-90	90	0.00	79.60	0.00	-4.26	0.00	0.00	0.00	0.00	75.34

* Bright Zone !

Segment Leq : 75.34 dBA

Results segment # 3: QEW Sbound (night)

Source height = 1.97 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.97	5.00	4.02	4.02

ROAD (0.00 + 73.57 + 0.00) = 73.57 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	79.60	0.00	-6.02	0.00	0.00	0.00	-0.84	72.74*
-90	90	0.00	79.60	0.00	-6.02	0.00	0.00	0.00	0.00	73.57

* Bright Zone !

Segment Leq : 73.57 dBA

Total Leq All Segments: 77.56 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 77.59
(NIGHT): 77.56

STAMSON 5.0 SUMMARY REPORT Date: 30-08-2023 15:55:18
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: e3west.te Time Period: Day/Night 16/8 hours
Description: Building E West Facade Floor 3

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

Car traffic volume : 17722/8861 veh/TimePeriod
Medium truck volume : 437/219 veh/TimePeriod
Heavy truck volume : 291/146 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Lundys Lane (day/night)

Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 80.00 / 80.00 m
Receiver height : 8.00 / 8.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 22911/11455 veh/TimePeriod
Medium truck volume : 1432/716 veh/TimePeriod
Heavy truck volume : 4296/2148 veh/TimePeriod
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: QEW NBound (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 40.00 / 30.00 m
Receiver height : 8.00 / 8.00 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 3.00 m
Elevation : 0.00 m
Barrier receiver distance : 23.00 / 13.00 m

```
Source elevation          :  -5.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Road data, segment # 3: QEW Sbound (day/night)
-----------------------------------------------
Car traffic volume  : 22911/11455 veh/TimePeriod
Medium truck volume :  1432/716   veh/TimePeriod
Heavy truck volume  :  4296/2148  veh/TimePeriod
Posted speed limit  :   100 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 3: QEW Sbound (day/night)
-----------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  60.00 / 50.00  m
Receiver height           :   8.00 / 8.00   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 90.00 deg
Barrier height            :   3.00 m
Elevation                 :   0.00 m
Barrier receiver distance :  44.00 / 34.00  m
Source elevation          :  -5.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00


Result summary (day)
--------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.Lundys Lane      !     1.12 !    56.05 !    56.05
 2.QEW NBound       !     1.97 !    68.75 !    68.75
 3.QEW Sbound       !     1.97 !    63.53 !    63.53
--------------------+----------+----------+----------
                      Total                  70.07 dBA


Result summary (night)
----------------------
```

	source height (m)	Road Leq (dBA)	Total Leq (dBA)	
1.Lundys Lane	1.12	56.06	56.06	
2.QEW NBound	1.97	77.10	77.10	*
3.QEW Sbound	1.97	65.31	65.31	
Total			77.41	dBA

TOTAL Leq FROM ALL SOURCES (DAY): 70.07
(NIGHT): 77.41

ATTACHMENT C

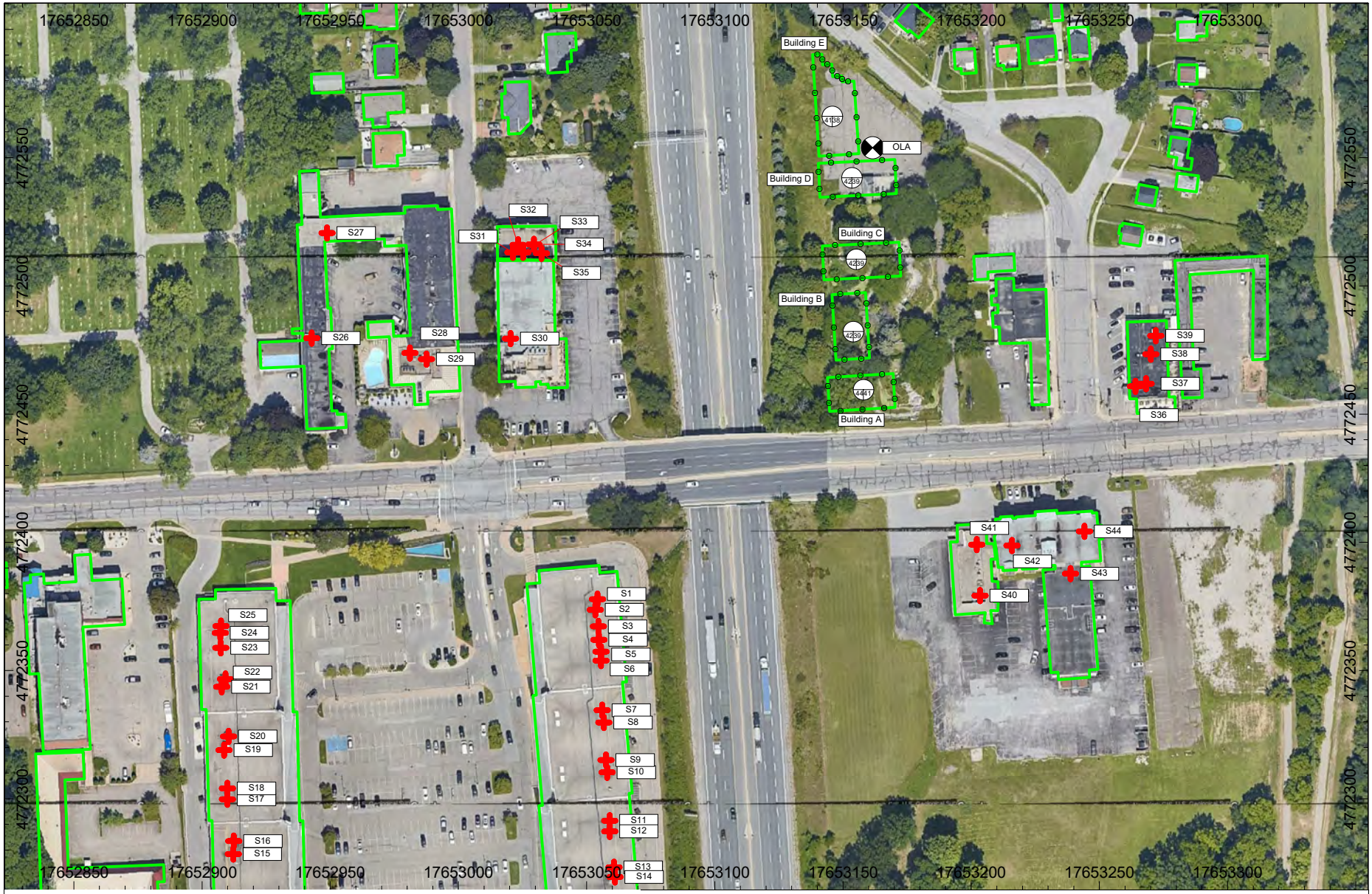

Figure 1 - Stationary Noise Impact from Neighboring Buildings to Site

ATTACHMENT D

Table C1
Stationary Noise Impact Source Data
7301 Lundy's Lane, Niagara Falls, Ontario

Noise Source Description	Cadna ID	Total SWL (dBA)	Data Source or Representative Data	Height Absolute (m)	Above Roof (m)	x	y
S1	OS_HVAC_2FAN	82.8	HVAC_2FAN	8.5	1.5	17653054	4772378
S2	OS_HVAC_2FAN	82.8	HVAC_2FAN	8.5	1.5	17653053	4772374
S3	OS_HVAC_2FAN	82.8	HVAC_2FAN	8.5	1.5	17653055	4772367
S4	OS_HVAC_1FAN	81.7	HVAC_1FAN	8.5	1.5	17653055	4772362
S5	OS_HVAC_2FAN	82.8	HVAC_2FAN	8.5	1.5	17653056	4772357
S6	OS_HVAC_2FAN	82.8	HVAC_2FAN	8.5	1.5	17653056	4772354
S7	OS_HVAC_2FAN	82.8	HVAC_2FAN	8.5	1.5	17653056	4772335
S8	OS_HVAC_2FAN	82.8	HVAC_2FAN	8.5	1.5	17653057	4772330
S9	OS_HVAC_2FAN	82.8	HVAC_2FAN	8.5	1.5	17653058	4772315
S10	OS_HVAC_2FAN	82.8	HVAC_2FAN	8.5	1.5	17653058	4772310
S11	OS_HVAC_2FAN	82.8	HVAC_2FAN	8.5	1.5	17653059	4772291
S12	OS_HVAC_2FAN	82.8	HVAC_2FAN	8.5	1.5	17653059	4772287
S13	OS_HVAC_1FAN	81.7	HVAC_1FAN	8.5	1.5	17653061	4772273
S14	OS_HVAC_1FAN	81.7	HVAC_1FAN	8.5	1.5	17653061	4772270
S15	OS_HVAC_2FAN	82.8	HVAC_2FAN	8.5	1.5	17652912	4772278
S16	OS_HVAC_2FAN	82.8	HVAC_2FAN	8.5	1.5	17652912	4772284
S17	OS_HVAC_2FAN	82.8	HVAC_2FAN	8.5	1.5	17652910	4772300
S18	OS_HVAC_2FAN	82.8	HVAC_2FAN	8.5	1.5	17652910	4772304
S19	OS_HVAC_2FAN	82.8	HVAC_2FAN	8.5	1.5	17652909	4772319
S20	OS_HVAC_2FAN	82.8	HVAC_2FAN	8.5	1.5	17652910	4772324
S21	OS_HVAC_2FAN	82.8	HVAC_2FAN	8.5	1.5	17652908	4772344
S22	OS_HVAC_2FAN	82.8	HVAC_2FAN	8.5	1.5	17652909	4772347
S23	OS_HVAC_1FAN	81.7	HVAC_1FAN	8.5	1.5	17652907	4772359
S24	OS_HVAC_2FAN	82.8	HVAC_2FAN	8.5	1.5	17652907	4772365
S25	OS_HVAC_2FAN	82.8	HVAC_2FAN	8.5	1.5	17652907	4772367
S26	OS_HVAC_1FAN	81.7	HVAC_1FAN	9.5	1.5	17652943	4772480
S27	OS_Representative_MUA	80.6	Representative_MUA	9.5	1.5	17652949	4772521
S28	OS_HVAC_1FAN	81.7	HVAC_1FAN	9.5	1.5	17652981	4772474
S29	OS_HVAC_2FAN	82.8	HVAC_2FAN	9.5	1.5	17652988	4772471
S30	OS_HVAC_1FAN	81.7	HVAC_1FAN	19.5	1.5	17653020	4772479
S31	OS_HVAC_1FAN	81.7	HVAC_1FAN	9.5	1.5	17653021	4772513
S32	OS_HVAC_1FAN	81.7	HVAC_1FAN	9.5	1.5	17653023	4772516
S33	OS_Representative_MUA	80.6	Representative_MUA	9.5	1.5	17653025	4772513
S34	OS_HVAC_1FAN	81.7	HVAC_1FAN	9.5	1.5	17653029	4772516
S35	OS_HVAC_2FAN	82.8	HVAC_2FAN	9.5	1.5	17653032	4772513
S36	OS_HVAC_1FAN	81.7	HVAC_1FAN	7.1	1.5	17653264	4772461
S37	OS_HVAC_1FAN	81.7	HVAC_1FAN	7.1	1.5	17653268	4772462
S38	OS_Representative_MUA	80.6	Representative_MUA	7.1	1.5	17653270	4772473
S39	OS_HVAC_1FAN	81.7	HVAC_1FAN	7.1	1.5	17653272	4772481
S40	OS_HVAC_2FAN	82.8	HVAC_2FAN	6.5	1.5	17653203	4772379
S41	OS_HVAC_1FAN	81.7	HVAC_1FAN	6.5	1.5	17653202	4772399
S42	OS_Representative_MUA	80.6	Representative_MUA	17.5	1.5	17653216	4772399
S43	OS_HVAC_1FAN	81.7	HVAC_1FAN	17.5	1.5	17653239	4772388
S44	OS_Representative_MUA	80.6	Representative_MUA	17.5	1.5	17653244	4772404