Appendix J

Noise Report

BT ENGINEERING

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MEMORANDUM

TO:	File	**DATE:**	July 7, 2025
FROM:	Helene Bygott, Engineering Technician Steve Taylor, P.Eng. M.Eng	**BTE PROJECT #:**	23-041
PROJECT:	County of Essex County Road 46 and Concession Roads 8 and 9 EA		
SUBJECT:	Noise Analysis of Proposed and Existing Conditions		

1.0 INTRODUCTION

As part of the Environmental Assessment (EA) for improvements to County Road 46 (Provincial Road/North Talbot Road/Middle Road), a noise analysis has been undertaken from Highway 401 to County Road 19 (Manning Road) and Concession Roads 8 and 9 from County Road 46 northerly to the Town boundary, in the Town of Tecumseh, Ontario. The Study Area is illustrated in **Figure 1**.

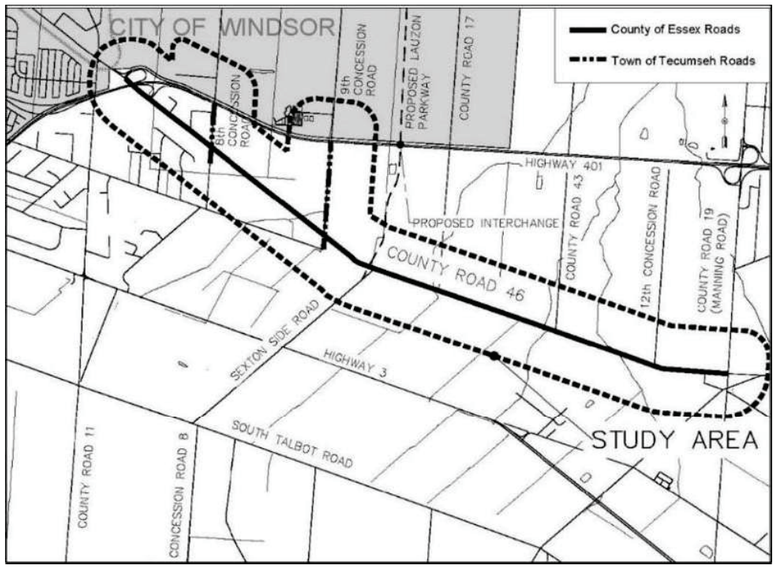

Figure 1: Study Area

The purpose of this noise assessment is to evaluate projected noise levels and assess potential increases in noise levels associated with proposed transportation improvements to determine if noise mitigation measures

are required. Noise from Highway 401 can be heard at these roads. The assessment will also determine if noise levels from Highway 401 will exceed the noise levels generated by traffic on heard on. County Road 46 and the Concession Roads).

Noise contours were developed at 5 dBA intervals, reflecting changes in topography and traffic volumes without mitigation measures for proposed conditions in 2051. Utilizing the MTO Environmental Guide for road projects (see **Figure 2**), the following mitigation effort was considered for the noise assessment along the County Road 46 corridor. The assessment considers mitigation where there is a change equal to or greater than 5 dBA due to proposed improvements, or the projected noise levels are greater than or equal to 65 dBA.

Change in Noise Level due to Proposed Improvements / Projected Future Build Noise Levels	Mitigation Effort Required
< 5 dB change & < 65 dBA	• None
≥ 5 dB change OR ≥ 65 dBA	• Investigate noise control measures within MTO right-of-way. • Introduce noise control measures within right-of-way and mitigate to a Future No-Build noise levels if technically, economically, and administratively feasible. • Noise control measures, where introduced, should achieve a minimum of 5 dBA attenuation averaged over first row receptors (see Appendix A for definition of first row receptors)

Figure 2: Mitigation Abatement Warrant for Consideration Following MTO Environmental Guide for Noise

2.0 METHODOLOGY

The noise assessment utilized the STAMSON 5.04 highway noise modelling software to determine 16-hour daytime and 8-hour nighttime equivalent sound levels (Leq) for the roadway traffic (see **Attachment 1**).

The following input variables were used or considered in the STAMSON 5.04 noise software program for generating sound levels:

- Topography (hills, flatlands).
- Existing attenuation due to shielding from barriers (natural or man-made, including dense rows of houses).
- The intermediate ground surface (hard surface reflects sound, soft surface absorbs sound).
- Distance, in metres, from source to receiver, using the centreline of the road as the source.

- Receiver height, in metres - 1.5 metres above ground level.
- Posted speed limit:
  - County Road 46 west of Proposed Lauzon Parkway - 60 km/h
  - County Road 46 east of Proposed Lauzon Parkway - 80 km/h
  - 8th Concession 60 km/h
  - 9th Concession 60 km/h
  - Proposed Lauzon Parkway 70km/h
  - Highway 401 110 km/h (max speed limit in STAMSON software is 100 km/h, this will have minimal impact on the noise levels).
- Depth and type of woods (0-30 m, 30-60 m, 60 m or more).
- Roadway grade (slope, assumed 2%).
- County Road 17 closed at Highway 401.

3.0 TRAFFIC DATA

The noise source considered was vehicular traffic on County Road 46, 8th Concession, 9th Concession, Lauzon Parkway and the Highway 401. To not reduce the impact of the highway noise no other noise sources were considered for the Study Area. Predicted Average Annual Daily Traffic Volumes (AADT) and commercial truck volume percentages were applied for the proposed (2051) condition as seen in **Table 1**. Existing AADT volumes (2024) and truck volume percentages are included below in **Table 2**.

Table 1: 2051 AADT and commercial truck volume percentages for Study Area

Road Name	Medium Trucks (%)	Heavy Trucks (%)	AADT
8th Concession north	10	5	15000
8th Concession south	10	5	7500
9th Concession north	4	6	8000
9th Concession south	4	6	3000
Lauzon Parkway north	7	5	25000
Lauzon Parkway south	4	2	15000
County Road 46 east of Lauzon Parkway	4	6	18000
County Road 46 west of Lauzon Parkway	10	5	25000
Highway 401	5	35	43000

Table 2: 2024 AADT and commercial truck volume percentages for Study Area

Road Segment	Medium Trucks (%)	Heavy Trucks (%)	AADT
8th Concession north	8	4	3100
8th Concession south	9	5	3000
9th Concession north	2	1	3000

Subject: Noise Analysis of Proposed and Existing Conditions
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Report Date: July 7, 2025

Table 2: 2024 AADT and commercial truck volume percentages for Study Area

Road Segment	Medium Trucks (%)	Heavy Trucks (%)	AADT
9th Concession south	2	0	4000
County Road 46 from West Limit to 8th Concession	8	4	8000
County Road 46 from 8th Concession to 9th Concession	9	4	6500
County Road 46 from 9th Concession to 10th Concession	7	3	8500
County Road 46 from 10th Concession to Manning Road	4	2	12000
Highway 401	5	35	25500

4.0 INTERSECTION ALTERNATIVES

At the intersections along County Road 46, the noise impacts of conventional traffic signals and roundabout control were assessed. The alternatives are illustrated in **Figure 3** to **Figure 7**. When comparing the intersection control types, the roundabout will have lower sound levels. It is estimated to result in a 2 dBA lower sound levels at distances of 0-60 m and 1 dBA for distances between 60-150 m resulting from the reduction of stop and go traffic with the use of roundabout control.

Figure 3: Intersection Design Alternatives at County Road 46 and Concession Road 8

Figure 4: Intersection Design Alternatives at County Road 46 and Concession Road 9

Figure 5: Intersection Design Alternatives at County Road 46 and County Road 17

Figure 6: Intersection Design Alternatives at County Road 46 and County Road 43

Figure 7: Intersection Design Alternatives at County Road 46 and 12th Concession

5.0 SOUND LEVEL FORCASTS

5.1 Intersections

It was concluded that the use of roundabout control was preferable from a sound perspective for houses near the study area.

5.2 County Road 46 Corridor

Based on the noise contours generated from STAMSON 5.04, the following properties are projected to experience a 65 dBA sound level in the OLA:

- 8639 County Road 46
- 8559 County Road 46
- 6703 County Road 46
- 5072 County Road 46
- 3955 County Road 46

6.0 WARRANT FOR MITIGATION

The requirements for a property to be considered for mitigation require a future total sound level of 65 dBA in the outdoor living area (OLA). If the proposed noise levels were not above 65 dBA, the properties were still eligible for mitigation if there was a 5 dBA increase from the existing to proposed condition (which was not triggered for any receiver site as a result of the project). Sound level changes as a result of the project are forecast be less than 3 dBA. Sound level changes of 3dBA or less are generally imperceptible to the human ear.

All 5 properties identified in Section 5.2 were reviewed for the feasibility of a noise barrier, as they all experience a 65 dBA sound level in the OLA. It is not considered technically feasible to implement noise barriers due to driveway openings, which would make the barrier ineffective, and therefore are not recommended for these 5 properties.

After further analysis of property 6703 County Road 46, it is recommended to move the 60km/h transition farther east of the proposed Lauzon Parkway, as well to move the alignment north from the property to avoid the mitigation measures that would otherwise be required.

7.0 CONCLUSION

After reviewing the properties and their surrounding areas, it is recommended that noise barriers not be installed due to small magnitude of sound level changes from the project (sound level changes less than 3 dBA) and is considered not technically feasible to implement noise barriers where front facing houses to the street require openings for driveways. Noise barriers are not considered feasible to achieve a 5 dBA sound level reduction.

See **Figure 8**, **Figure 9**, **Figure 10** and **Figure 11** for the existing and proposed noise contours.

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Project: BTE File: 23-041, County of Essex County Road 46 and Concession Roads 8 and 9 EA
Report Date: July 7, 2025

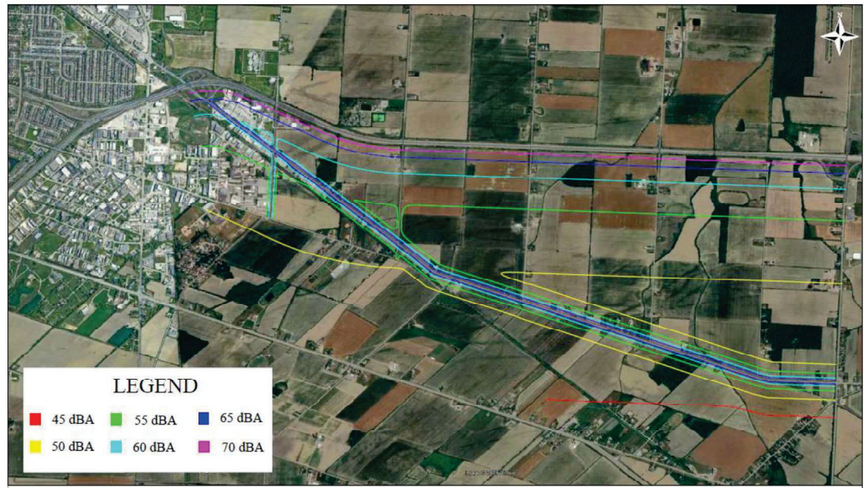

Figure 8: 2024 Day Assessment Noise Contours

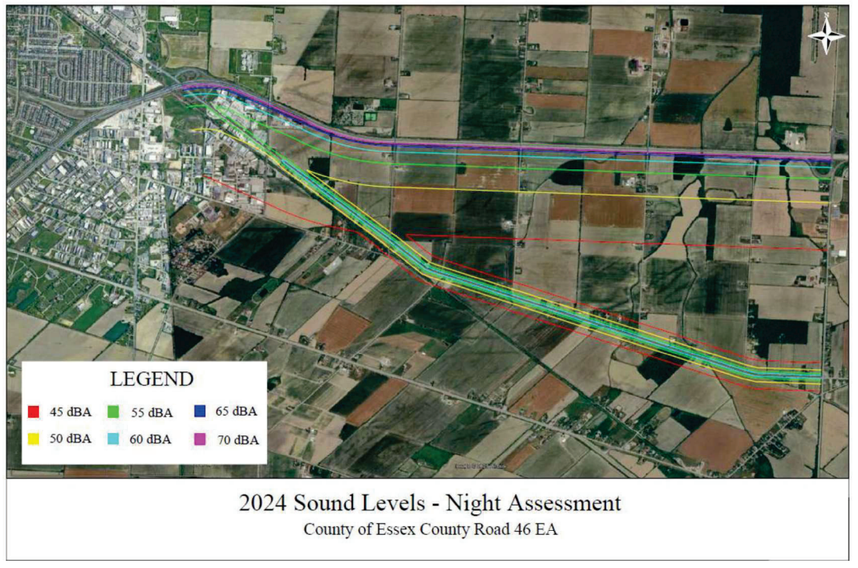

Figure 9: 2024 Night Assessment Noise Contours

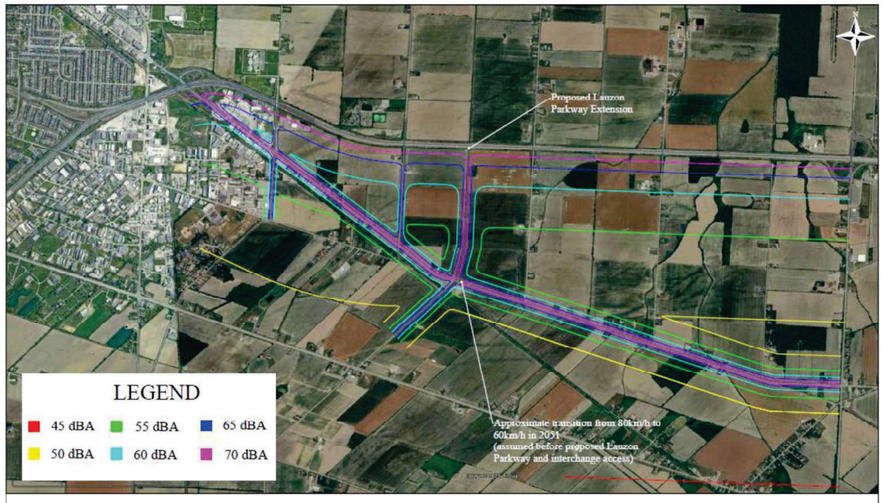

Figure 10: 2051 Day Assessment Noise Contours

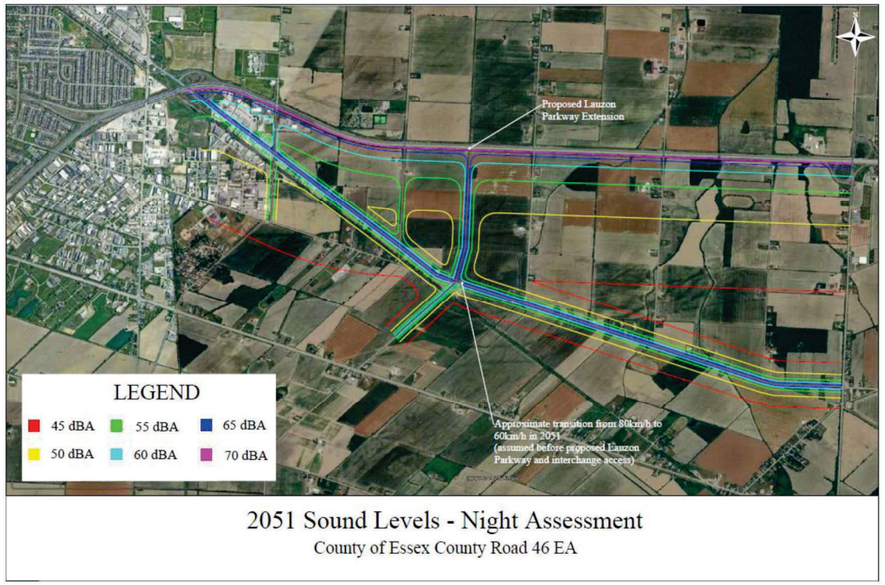

Figure 11: 2051 Night Assessment Noise Contours

Attachment 1

STAMSON 5.04 Noise Assessment

STAMSON 5.0 NORMAL REPORT Date: 05-03-2025 04:19:48
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename:8TH CONC 2024 Time Period: Day/Night 16/8 hours-2024
Description:2024 8th Concession Road noise assessment

Road data, segment # 1: 8th Conc N (day/night)

Car traffic volume : 2456/285 veh/TimePeriod NOTE:285 used to generate report (actual value 273)
Medium truck volume : 224/25 veh/TimePeriod
Heavy truck volume : 13/13 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: 8th Conc N (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 53.00 / 53.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: 8th Conc S (day/night)

Car traffic volume : 2322/280 veh/TimePeriod NOTE:280 used to generate report (actual value 258)
Medium truck volume : 243/27 veh/TimePeriod
Heavy truck volume : 135/15 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: 8th Conc S (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 53.00 / 53.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: 8th Conc N (day)

Source height = 0.83 m

ROAD (0.00 + 49.72 + 0.00) = 49.72 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.66	60.28	0.00	-9.10	-1.46	0.00	0.00	0.00	49.72

Segment Leq : 49.72 dBA

Results segment # 2: 8th Conc S (day)

Source height = 1.50 m

ROAD (0.00 + 53.15 + 0.00) = 53.15 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.66	63.71	0.00	-9.10	-1.46	0.00	0.00	0.00	53.15

Segment Leq : 53.15 dBA

Total Leq All Segments: 54.78 dBA

Results segment # 1: 8th Conc N (night)

Source height = 1.42 m

ROAD (0.00 + 46.26 + 0.00) = 46.26 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.66	56.82	0.00	-9.10	-1.46	0.00	0.00	0.00	46.26

Segment Leq : 46.26 dBA

Results segment # 2: 8th Conc S (night)

Source height = 1.47 m

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ROAD (0.00 + 46.68 + 0.00) = 46.68 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.66  57.24   0.00  -9.10  -1.46   0.00   0.00   0.00  46.68
-------------------------------------------------------------------------------

Segment Leq : 46.68 dBA

Total Leq All Segments: 49.49 dBA

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TOTAL Leq FROM ALL SOURCES (DAY): 54.78
                           (NIGHT): 49.49
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STAMSON 5.0        NORMAL REPORT        Date: 05-03-2025 11:14:26
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename:8CONC 2051                      Time Period: Day/Night 16/8 hours-2051
Description:2051 8th Concession Road noise analysis



Road data, segment # 1: 8Conc. North (day/night)
-----------------------------------------------
Car traffic volume  : 11474/1275  veh/TimePeriod
Medium truck volume :  1350/150   veh/TimePeriod
Heavy truck volume  :   675/75    veh/TimePeriod
Posted speed limit  :    60 km/h
Road gradient       :     2 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 1: 8Conc. North (day/night)
-----------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  53.00 / 53.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

↟
Road data, segment # 2: 8Conc. South (day/night)
-----------------------------------------------
Car traffic volume  :  5738/638   veh/TimePeriod
Medium truck volume :   675/75    veh/TimePeriod
Heavy truck volume  :   338/38    veh/TimePeriod
Posted speed limit  :    60 km/h
Road gradient       :     2 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 2: 8Conc. South (day/night)
-----------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  53.00 / 53.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

↟
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```
Results segment # 1: 8Conc. North (day)
---------------------------------------

Source height = 1.50 m

ROAD (0.00 + 60.25 + 0.00) = 60.25 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.66  70.80   0.00  -9.10  -1.46   0.00   0.00   0.00  60.25
-------------------------------------------------------------------------------

Segment Leq : 60.25 dBA

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Results segment # 2: 8Conc. South (day)
---------------------------------------

Source height = 1.50 m

ROAD (0.00 + 57.24 + 0.00) = 57.24 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.66  67.80   0.00  -9.10  -1.46   0.00   0.00   0.00  57.24
-------------------------------------------------------------------------------

Segment Leq : 57.24 dBA

Total Leq All Segments: 62.01 dBA

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Results segment # 1: 8Conc. North (night)
---------------------------------------

Source height = 1.50 m

ROAD (0.00 + 53.72 + 0.00) = 53.72 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.66  64.27   0.00  -9.10  -1.46   0.00   0.00   0.00  53.72
-------------------------------------------------------------------------------

Segment Leq : 53.72 dBA

↟
Results segment # 2: 8Conc. South (night)
---------------------------------------

Source height = 1.50 m

ROAD (0.00 + 50.74 + 0.00) = 50.74 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.66  61.30   0.00  -9.10  -1.46   0.00   0.00   0.00  50.74
-------------------------------------------------------------------------------

Segment Leq : 50.74 dBA

Total Leq All Segments: 55.49 dBA

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TOTAL Leq FROM ALL SOURCES (DAY): 62.01
                           (NIGHT): 55.49
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```

STAMSON 5.0 COMPREHENSIVE REPORT Date: 05-03-2025 05:50:57
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename:9TH CONC 2024 Time Period: Day/Night 16/8 hours-2024
Description:2024 9th Concession noise assessment

Road data, segment # 1: 9th Conc N (day/night)

Car traffic volume : 2619/315 veh/TimePeriod NOTE:315 used to generate report (actual value 291)
Medium truck volume : 54/6 veh/TimePeriod
Heavy truck volume : 27/3 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: 9th Conc N (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 53.00 / 53.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: 9th Conc S (day/night)

Car traffic volume : 3528/392 veh/TimePeriod
Medium truck volume : 72/8 veh/TimePeriod
Heavy truck volume : 0/0 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: 9th Conc S (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 53.00 / 53.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Segment # 1: 9th Conc N (day)

Source height = 1.00 m

ROAD (0.00 + 48.72 + 0.00) = 48.72 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.66	59.28	0.00	-9.10	-1.46	0.00	0.00	0.00	48.72

Segment Leq : 48.72 dBA

Segment # 2: 9th Conc S (day)

Source height = 0.50 m

ROAD (0.00 + 46.12 + 0.00) = 46.12 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.66	56.67	0.00	-9.10	-1.46	0.00	0.00	0.00	46.12

Segment Leq : 46.12 dBA

Total Leq All Segments: 50.62 dBA

Segment # 1: 9th Conc N (night)

Source height = 0.98 m

ROAD (0.00 + 42.37 + 0.00) = 42.37 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.66	52.93	0.00	-9.10	-1.46	0.00	0.00	0.00	42.37

Segment Leq : 42.37 dBA

Segment # 2: 9th Conc S (night)

Source height = 0.50 m

ROAD (0.00 + 39.58 + 0.00) = 39.58 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.66	50.14	0.00	-9.10	-1.46	0.00	0.00	0.00	39.58

Segment Leq : 39.58 dBA

Total Leq All Segments: 44.21 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 50.62
(NIGHT): 44.21

STAMSON 5.0 NORMAL REPORT Date: 05-03-2025 04:45:42
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename:9 CONC 2051 Time Period: Day/Night 16/8 hours-2051
Description:2051 9th Concession Road noise assessment

Road data, segment # 1: 9 Conc S (day/night)

Car traffic volume : 3240/360 veh/TimePeriod
Medium truck volume : 216/24 veh/TimePeriod
Heavy truck volume : 144/16 veh/TimePeriod
Posted speed limit : 50 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: 9 Conc S (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 53.00 / 53.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: 9 Conc N (day/night)

Car traffic volume : 2400/2400 veh/TimePeriod
Medium truck volume : 480/480 veh/TimePeriod
Heavy truck volume : 240/240 veh/TimePeriod
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: 9 Conc N (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 15.00 / 15.00 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: 9 Conc S (day)

Source height = 1.41 m

ROAD (0.00 + 51.98 + 0.00) = 51.98 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.66	62.53	0.00	-9.10	-1.46	0.00	0.00	0.00	51.98

Segment Leq : 51.98 dBA

Results segment # 2: 9 Conc N (day)

Source height = 1.67 m

ROAD (0.00 + 68.39 + 0.00) = 68.39 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.66	69.84	0.00	0.00	-1.45	0.00	0.00	0.00	68.39

Segment Leq : 68.39 dBA

Total Leq All Segments: 68.49 dBA

Results segment # 1: 9 Conc S (night)

Source height = 1.41 m

ROAD (0.00 + 45.45 + 0.00) = 45.45 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.66	56.00	0.00	-9.10	-1.46	0.00	0.00	0.00	45.45

Segment Leq : 45.45 dBA

Results segment # 2: 9 Conc N (night)

Source height = 1.67 m

ROAD (0.00 + 71.56 + 0.00) = 71.56 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.57	72.85	0.00	0.00	-1.29	0.00	0.00	0.00	71.56

Segment Leq : 71.56 dBA

Total Leq All Segments: 71.57 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 68.49
(NIGHT): 71.57

STAMSON 5.0 COMPREHENSIVE REPORT Date: 05-03-2025 05:16:30
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename:CR46 2024 Time Period: Day/Night 16/8 hours-2024
Description:2024 County Road 46 noise assessment

Road data, segment # 1: WL-8th Conc (day/night)

Car traffic volume : 6336/704 veh/TimePeriod
Medium truck volume : 576/64 veh/TimePeriod
Heavy truck volume : 288/32 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: WL-8th Conc (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 37.00 / 37.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↟
Road data, segment # 2: 8-9 Conc 60km/h (day/night)

Car traffic volume : 5090/566 veh/TimePeriod
Medium truck volume : 527/59 veh/TimePeriod
Heavy truck volume : 234/26 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: 8-9 Conc 60km/h (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 50.00 / 50.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↟

Road data, segment # 3: 8-9 Conc 80km/h (day/night)

Car traffic volume : 5090/566 veh/TimePeriod
Medium truck volume : 527/59 veh/TimePeriod
Heavy truck volume : 234/26 veh/TimePeriod
Posted speed limit : 80 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 3: 8-9 Conc 80km/h (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 50.00 / 50.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↟
Road data, segment # 4: 9-CR17 (day/night)

Car traffic volume : 6885/765 veh/TimePeriod
Medium truck volume : 536/60 veh/TimePeriod
Heavy truck volume : 230/26 veh/TimePeriod
Posted speed limit : 80 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 4: 9-CR17 (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 54.00 / 54.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↟
Road data, segment # 5: CR17-Manning (day/night)

Car traffic volume : 10152/1128 veh/TimePeriod
Medium truck volume : 432/48 veh/TimePeriod
Heavy truck volume : 216/24 veh/TimePeriod
Posted speed limit : 80 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 5: CR17-Manning (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 80.00 / 80.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↟
Segment # 1: WL-8th Conc (day)

Source height = 1.41 m

ROAD (0.00 + 59.34 + 0.00) = 59.34 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.66	67.31	0.00	-6.51	-1.46	0.00	0.00	0.00	59.34

Segment Leq : 59.34 dBA

↟
Segment # 2: 8-9 Conc 60 (day)

Source height = 1.41 m

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
-90	90	0.66	66.53	0.00	-8.68	-1.46	0.00	0.00	0.00	56.39

Segment Leq : 56.39 dBA

↟
Segment # 3: 8-9 Conc 80 (day)

Source height = 1.41 m

ROAD (0.00 + 58.91 + 0.00) = 58.91 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.66	69.05	0.00	-8.68	-1.46	0.00	0.00	0.00	58.91

Segment Leq : 58.91 dBA

↟
Segment # 4: 9-CR17 (day)

Source height = 1.32 m

ROAD (0.00 + 58.70 + 0.00) = 58.70 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.66	69.39	0.00	-9.23	-1.46	0.00	0.00	0.00	58.70

Segment Leq : 58.70 dBA

↟
Segment # 5: CR17-Manning (day)

Source height = 1.19 m

ROAD (0.00 + 56.13 + 0.00) = 56.13 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.66	69.65	0.00	-12.07	-1.46	0.00	0.00	0.00	56.13

Segment Leq : 56.13 dBA

Total Leq All Segments: 65.08 dBA

↟
Segment # 1: WL-8th Conc (night)

Source height = 1.41 m

ROAD (0.00 + 52.81 + 0.00) = 52.81 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.66	60.77	0.00	-6.51	-1.46	0.00	0.00	0.00	52.81

Segment Leq : 52.81 dBA

↟
Segment # 2: 8-9 Conc 60 (night)

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

Source height = 1.41 m

ROAD (0.00 + 49.87 + 0.00) = 49.87 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  60.01   0.00  -8.68  -1.46   0.00   0.00   0.00  49.87
-------------------------------------------------------------------------

Segment Leq : 49.87 dBA

↟
Segment # 3: 8-9 Conc 80 (night)
--------------------------------

Source height = 1.41 m

ROAD (0.00 + 52.39 + 0.00) = 52.39 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  62.53   0.00  -8.68  -1.46   0.00   0.00   0.00  52.39
-------------------------------------------------------------------------

Segment Leq : 52.39 dBA

↟
Segment # 4: 9-CR17 (night)
---------------------------

Source height = 1.32 m

ROAD (0.00 + 52.21 + 0.00) = 52.21 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  62.90   0.00  -9.23  -1.46   0.00   0.00   0.00  52.21
-------------------------------------------------------------------------

Segment Leq : 52.21 dBA

↟
Segment # 5: CR17-Manning (night)
---------------------------------

Source height = 1.19 m

ROAD (0.00 + 49.60 + 0.00) = 49.60 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  63.12   0.00 -12.07  -1.46   0.00   0.00   0.00  49.60
-------------------------------------------------------------------------

Segment Leq : 49.60 dBA

Total Leq All Segments: 58.57 dBA

↟


TOTAL Leq FROM ALL SOURCES (DAY): 65.08
                           (NIGHT): 58.57
↟
↟
```

STAMSON 5.0 NORMAL REPORT Date: 05-03-2025 11:03:17
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename:CR46 2051 Time Period: Day/Night 16/8 hours-2051
Description:2051 County Road 46 noise assessment

Road data, segment # 1: CR46 W Lauzon (day/night)

Car traffic volume : 19125/2125 veh/TimePeriod
Medium truck volume : 2250/250 veh/TimePeriod
Heavy truck volume : 1125/125 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: CR46 W Lauzon (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 50.00 / 50.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: CR46 E Lauz 60 (day/night)

Car traffic volume : 14580/1620 veh/TimePeriod
Medium truck volume : 972/108 veh/TimePeriod
Heavy truck volume : 648/72 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: CR46 E Lauz 60 (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 80.00 / 80.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 3: CR46 E Lauz 80 (day/night)

Car traffic volume : 14580/1620 veh/TimePeriod
Medium truck volume : 972/108 veh/TimePeriod
Heavy truck volume : 648/72 veh/TimePeriod
Posted speed limit : 80 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 3: CR46 E Lauz 80 (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 80.00 / 80.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: CR46 W Lauzon (day)

Source height = 1.50 m

ROAD (0.00 + 62.89 + 0.00) = 62.89 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.66	73.02	0.00	-8.68	-1.46	0.00	0.00	0.00	62.89

Segment Leq : 62.89 dBA

Results segment # 2: CR46 E Lauz 60 (day)

Source height = 1.41 m

ROAD (0.00 + 57.05 + 0.00) = 57.05 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.66	70.57	0.00	-12.07	-1.46	0.00	0.00	0.00	57.05

Segment Leq : 57.05 dBA

Results segment # 3: CR46 E Lauz 80 (day)

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---------------------------------------

Source height = 1.41 m

ROAD (0.00 + 59.53 + 0.00) = 59.53 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.66  73.05   0.00 -12.07  -1.46   0.00   0.00   0.00  59.53
-------------------------------------------------------------------------------

Segment Leq : 59.53 dBA

Total Leq All Segments: 65.25 dBA

↟
Results segment # 1: CR46 W Lauzon (night)
---------------------------------------

Source height = 1.50 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
-------------------------------------------------------------------------------
   -90     90   0.66  66.49   0.00  -8.68  -1.46   0.00   0.00   0.00  56.35
-------------------------------------------------------------------------------

Segment Leq : 56.35 dBA

↟
Results segment # 2: CR46 E Lauz 60 (night)
---------------------------------------

Source height = 1.41 m

ROAD (0.00 + 50.52 + 0.00) = 50.52 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.66  64.04   0.00 -12.07  -1.46   0.00   0.00   0.00  50.52
-------------------------------------------------------------------------------

Segment Leq : 50.52 dBA

↟
Results segment # 3: CR46 E Lauz 80 (night)
---------------------------------------

Source height = 1.41 m

ROAD (0.00 + 53.00 + 0.00) = 53.00 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.66  66.52   0.00 -12.07  -1.46   0.00   0.00   0.00  53.00
-------------------------------------------------------------------------------

Segment Leq : 53.00 dBA

Total Leq All Segments: 58.71 dBA

↟


TOTAL Leq FROM ALL SOURCES (DAY): 65.25
                           (NIGHT): 58.71
↟
↟
```

STAMSON 5.0 NORMAL REPORT Date: 05-03-2025 02:42:30
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename:HWY401 2024 Time Period: Day/Night 16/8 hours-2024
Description:2024 Highway 401 noise assessment

Road data, segment # 1: HWY 401 2024 (day/night)

Car traffic volume : 15300/1530 veh/TimePeriod
Medium truck volume : 1275/128 veh/TimePeriod
Heavy truck volume : 8925/893 veh/TimePeriod
Posted speed limit : 100 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: HWY 401 2024 (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 60.00 / 60.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: HWY 401 2024 (day)

Source height = 2.40 m

ROAD (0.00 + 72.09 + 0.00) = 72.09 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.63	83.34	0.00	-9.83	-1.41	0.00	0.00	0.00	72.09

Segment Leq : 72.09 dBA

Total Leq All Segments: 72.09 dBA

Results segment # 1: HWY 401 2024 (night)

Source height = 2.40 m

ROAD (0.00 + 65.11 + 0.00) = 65.11 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.63	76.35	0.00	-9.83	-1.41	0.00	0.00	0.00	65.11

Segment Leq : 65.11 dBA

Total Leq All Segments: 65.11 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 72.09
(NIGHT): 65.11

STAMSON 5.0 NORMAL REPORT Date: 05-03-2025 02:36:41
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename:HWY401 2051 Time Period: Day/Night 16/8 hours-2051
Description:2051 Highway 401 noise analysis

Road data, segment # 1: HWY 401 2051 (day/night)

Car traffic volume : 23220/2580 veh/TimePeriod
Medium truck volume : 1935/215 veh/TimePeriod
Heavy truck volume : 13545/1505 veh/TimePeriod
Posted speed limit : 100 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: HWY 401 2051 (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 60.00 / 60.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: HWY 401 2051 (day)

Source height = 2.40 m

ROAD (0.00 + 73.90 + 0.00) = 73.90 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.63	85.15	0.00	-9.83	-1.41	0.00	0.00	0.00	73.90

Segment Leq : 73.90 dBA

Total Leq All Segments: 73.90 dBA

Results segment # 1: HWY 401 2051 (night)

Source height = 2.40 m

ROAD (0.00 + 67.37 + 0.00) = 67.37 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.63	78.62	0.00	-9.83	-1.41	0.00	0.00	0.00	67.37

Segment Leq : 67.37 dBA

Total Leq All Segments: 67.37 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 73.90
(NIGHT): 67.37

STAMSON 5.0 NORMAL REPORT Date: 05-03-2025 11:45:03
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename:LAUZON 2051 Time Period: Day/Night 16/8 hours-2051
Description:2051 Proposed Lauzon Parkway noise assessment

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

Car traffic volume : 19800/2200 veh/TimePeriod
Medium truck volume : 1575/175 veh/TimePeriod
Heavy truck volume : 1125/125 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Lauzon North (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 60.00 / 60.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 12690/1410 veh/TimePeriod
Medium truck volume : 540/60 veh/TimePeriod
Heavy truck volume : 270/30 veh/TimePeriod
Posted speed limit : 70 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Lauzon South (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 60.00 / 60.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Lauzon North (day)

Source height = 1.50 m

ROAD (0.00 + 62.53 + 0.00) = 62.53 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.66	73.98	0.00	-9.99	-1.46	0.00	0.00	0.00	62.53

Segment Leq : 62.53 dBA

Results segment # 2: Lauzon South (day)

Source height = 1.19 m

ROAD (0.00 + 57.90 + 0.00) = 57.90 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.66	69.35	0.00	-9.99	-1.46	0.00	0.00	0.00	57.90

Segment Leq : 57.90 dBA

Total Leq All Segments: 63.82 dBA

Results segment # 1: Lauzon North (night)

Source height = 1.50 m

ROAD (0.00 + 55.99 + 0.00) = 55.99 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.66	67.45	0.00	-9.99	-1.46	0.00	0.00	0.00	55.99

Segment Leq : 55.99 dBA

Results segment # 2: Lauzon South (night)

Source height = 1.19 m

ROAD (0.00 + 51.37 + 0.00) = 51.37 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.66	62.82	0.00	-9.99	-1.46	0.00	0.00	0.00	51.37

Segment Leq : 51.37 dBA

Total Leq All Segments: 57.28 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 63.82
(NIGHT): 57.28