



1458 Huron Street

Environmental Noise Assessment

Project Location:

1458 Huron Street, London, ON

Prepared for:

Omni Developments Inc.
38 – 567 Rosecliffe Terrace,
London, ON N6K 0E2

Prepared by:

MTE Consultants Inc.
123 St. George Street
London, ON N6A 3A1

February 2, 2024

MTE File No.: 54428-200



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1.0 INTRODUCTION

MTE Consultants Inc. (MTE) was retained by Omni Developments Inc. to complete an Environmental Noise Assessment for a proposed residential development at 1458 Huron Street in London, Ontario. The 0.36 hectare (0.90 acres) property is located on the north side of Huron Street, east of Webster Street and west of Sandford Street. The property is currently developed with a single-family dwelling. The conceptual layout includes four townhouse buildings with a total of twenty units, landscaped areas, parking areas, and the retained existing building.

The subject site is generally bounded by single-family residential properties to the north, east and west, and Huron Street to the south. The Site location is shown in **Figure 1.1**.

The purpose of this study is to support the Zoning By-law Amendment application and evaluate the road traffic noise impact from forecasted traffic volumes of Huron Street on the proposed development. Noise impacts on the existing building are not included in the assessment. This study recommends noise control measures to meet the Ministry of the Environment, Conservation and Parks' (MECP) guidelines, while satisfying the planning requirements of the City of London.

2.0 CRITERIA

This report and analysis have been completed using the requirements of the MECP's Publication *NPC-300: Environmental Noise Guideline: Stationary and Transportation Sources – Approval and Planning (2013)*.

2.1 Outdoor Noise Level Limits


The recommended outdoor daytime noise levels, taken from Table C-1 in the Publication NPC-300 are:

Usage	Between Hours	Noise Levels
Outdoor Living Area (OLA)	07:00 to 23:00	55dBA L_{eq}

Table 2.1 summarizes the noise control measures required for road traffic sources.

Table 2.1 – Required Noise Control Measures for Outdoor Living Areas

Daytime (07:00-23:00)	Exceeds Objective By	Noise Control Measures
55dBA or less	0dBA	No requirements or conditions
56-60dBA	1-5dBA	Noise Warning Clause
>60dBA	>5dBA	Alternative Land Use Alternative Draft Plan Designs Barriers

Engineers, Scientists, Surveyors

PROJECT
1458 HURON STREET

TITLE
LOCATION PLAN

Drawn	AH	Scale	1:10000	Figure 1.1
Checked	LB	Project No.	54428-200	
Date	2024-01-22	Rev No.	0	

2.2 Indoor Noise Level Limits

Similar to outdoor noise levels limits, the recommended indoor noise levels taken from Table C-2 in the Publication NPC-300 are:

Usage	Between Hours	Noise Levels (L_{eq})
Indoor Living Area	07:00 to 23:00	45dBA
Indoor Living Area (Sleeping Quarters)	23:00 to 07:00	40dBA

Outdoor sound levels (calculated at the plane of window) are used to determine if acoustical mitigation measures are required. **Table 2.2** summarizes control measures, for indoor living area sound levels, based on a 10dBA reduction for a standard wall section applied to the outdoor sound levels due to road traffic.

Table 2.2 – Required Noise Control Measures for Indoor Living Areas

Daytime (07:00-23:00)	Nighttime (23:00-07:00)	Exceeds Objective By	Noise Control Measures
45dBA or less	40dBA or less	0dBA	No requirements or conditions
46-55dBA	41-50dBA	1-10dBA	Noise Warning Clause Provisions for central A/C
>55dBA	>50dBA	>10dBA	Noise Warning Clause Central A/C installed prior to occupancy Building components designed to achieve indoor sound level criteria

2.3 Calculation Parameters

The allowable outdoor noise level for outdoor living areas is 55dBA, with up to 60dBA being allowed with a noise warning clause. The noise level calculations for outdoor daytime noise have been included for the proposed common exterior amenity area and the rear yard of Unit 8 (representing the worst case setting for rear yards in Units 1 to 8), at a height of 1.5m above ground level.

The allowable indoor daytime (07:00 - 23:00) and nighttime (23:00 - 07:00) noise levels are 45dBA and 40dBA, respectively. Indoor noise levels are assumed to be 10dBA less than outdoor noise levels, measured at the plane of window, for buildings with standard wall construction. Daytime and nighttime noise calculations for indoor noise levels at locations which represent the worst-case impact have been included. It is typically assumed that daytime and nighttime living areas are most conservatively represented at the top floor of the buildings, or 4.5m above ground level for the proposed two-storey units.

Elevations used for this analysis are based on existing centreline grades on Huron Street and proposed grades within the development; included in **MTE Drawing 54428-200-NA1.1**.

3.0 ANALYSIS PROCEDURES

3.1 Traffic Data

The road traffic noise source considered in this analysis included:

- Huron Street.

The City provided the following traffic information by email, dated January 11, 2024:

- 2024 AADT: 16,000vpd.
- Recommended annual growth projection: 1.5%.
- Percentage of heavy trucks: 1.5%.
- Percentage of medium trucks: 1.5%.
- Posted speed limit: 60km/hr.
- Day/night traffic split: 96/4%.

The road traffic information, projected 10 years to 2034, is summarized in **Table 3.1**. See **Appendix A** for road traffic data provided by the City of London.

3.2 Traffic Calculation Methods

Resulting road noise levels were calculated using the Stamson v5.03 computer program approved by the MECP. Daytime and nighttime noise levels were calculated based on 24-hour volume breakdown. The daytime volume (over 16 hours) is obtained by multiplying the determined AADT by the fraction of daily traffic expected during the daytime period (96%). The nighttime volumes are obtained in a similar manner, except using 4% for expected nighttime traffic (over 8 hours). Noise calculation results are attached in **Appendix B**.

Table 3.1 – Projected 2034 Road Traffic Volumes for Huron Street

Huron Street	Projected 2034 AADT – 18,569vpd Speed Limit = 60km/hr Road Grade = 0.5%		
	Cars	Medium Trucks (1.5%)	Heavy Trucks (1.5%)
Daytime Volume (16hr)	17,291	267	267
Nighttime Volume (8hr)	720	11	11

4.0 RESULTS AND ANALYSIS

4.1 Noise Level Calculations

This noise report has been completed to determine noise levels from Huron Street for the proposed residential development and to recommend noise mitigation measures, if required. The elevations used are based on existing centreline elevations on Huron Street and proposed finished grades for the development. Stamson output files are attached in **Appendix B**.

4.1.1 Points of Assessment (POA)

Points of Assessment (POA) are typically placed in critical locations where the resulting noise levels are expected to be high due to the close proximity to the noise sources, or where the thresholds outlined in **Table 2.2** are achieved. As such, a total of three POAs have been modelled along the proposed building envelopes to assess if special building components (windows, walls, etc.) will be required to attenuate incoming road traffic noise. Calculations for POA2 and POA3 were completed using shielding effects from the proposed and existing buildings.

4.1.2 Outdoor Living Area (OLA)

Similarly, Outdoor Living Area (OLA) Points of Assessment are typically placed in critical locations where the resulting noise levels are assumed to be high due to the close proximity to the noise source, or where thresholds outlined in **Table 2.1** are achieved. As such, two OLAs, were modelled to assess if additional noise shielding will be required to attenuate road traffic noise. The noise level calculations incorporated a shielding effect from the proposed and existing buildings.

Table 4.1 indicates the distances measured to the specified receiver locations within the development used during the modelling analysis.

Table 4.1 – Receiver Location Distance Measurements

Point of Assessment	Location	Receiver Height (m)	Distance from Huron Street (m)
POA 1	South side of Unit 14 (representing south sides of Huron Street facing Units 10, 12, 14, 16, 18, and 20)	4.5 (2 nd Floor)	19.5
POA 2	West side of Unit 10 (also representing east side of Unit 20)	4.5 (2 nd Floor)	20.0
POA 3	Southeast corner of Unit 8 (representing worst-case for Units 1-8)	4.5 (2 nd Floor)	62.0
OLA1	Common Exterior Amenity Area	1.5	44.0
OLA2	Rear yard of Unit 8 (representing worst case for Units 1-8)	1.5	74.5

Calculated noise levels for the projected traffic volume growth scenario for these POAs are summarized in **Table 4.2**. Refer to **MTE Drawing 54428-200-NA1.1** for a graphical representation of the locations of the Points of Assessment.

Table 4.2 - ROAD TRAFFIC NOISE LEVELS

Point of Assessment	DAYTIME NOISE LEVELS					NIGHTTIME NOISE LEVELS				
	Calculated Outdoor Road Noise Level (dBA) POW ¹	Attenuated Indoor Road Noise Level ² (dBA)	Indoor Noise Level Limit (dBA)	Exceeds Indoor Noise Level By (dBA)	Comments	Calculated Outdoor Road Noise Level (dBA) POW ¹	Attenuated Indoor Noise Level ² (dBA)	Indoor Noise Level Limit (dBA)	Exceeds Indoor Noise Level By (dBA)	Comments
POA1	66.5	56.5	45.0	11.5	Special Building Components, Type D Warning Clause and A/C installed	55.6	45.6	40.0	5.6	Daytime Governs
POA2	63.4	53.4	45.0	8.4	Type C Warning Clause and provisions for A/C	52.6	42.6	40.0	2.6	Daytime Governs
POA3	59.6	49.6	45.0	4.6	Type C Warning Clause and provisions for A/C	48.8	38.8	40.0	0.0	Daytime Governs
Outdoor Living Area Point of Assessment	Calculated Outdoor Road Noise Level (dBA)	Outdoor Noise Level Limit (dBA)		Exceeds Outdoor Noise Level By (dBA)	Comments					
OLA1	56.9	55.0		1.9	Type A Noise Warning Clause					
OLA2	55.2	55.0		0.2	Type A Noise Warning Clause					

- Notes: 1. POW means Plane of Window
 2. Assuming standard wall construction (provides 10dBA noise level attenuation)
 3. POA means Point of Assessment. OLA means Outdoor Living Area.
 4. Results for POA2, POA3 and OLA1 were calculated assuming the potential shielding effect from the proposed and existing buildings, where applicable.

4.2 Mitigation Measures

This noise report has been completed to determine the resulting noise impacts from Huron Street on the proposed development at 1458 Huron Street.

4.2.1 Building Components

Noise calculations indicate that POA1 (for 1st and 2nd floors), the Point of Assessment representing the south side of townhouse units nearest Huron Street, has a plane of window noise level exceeding 65dBA during the daytime, which warrants a check for the need of special building components. Architectural plans provided by Thirteen Architectural Inc. (dated January 8, 2024) were used to complete sample STC calculations to estimate the required STC ratings for building components in Units 10, 12, 14, 16, 18, and 20 in living areas nearest Huron Street. These calculations, included in **Appendix C**, are based on preliminary architectural plans and are simply samples. Actual STC requirements, based on final plans, will be required prior to the issuance of building permits. Prior to ordering and installation of any required special components, architectural details of the walls, windows, and exterior doors must be verified by an Acoustical Professional to ensure that they meet the required STC ratings.

A brief summary of sample STC rating requirements for different building components is outlined in **Table 4.3**.

Table 4.3 – Sample Building Components for Road Noise Attenuation

Location	POW (dBA)	Indoor Daytime Criteria (dBA)	Required STC Wall	Required STC Window
Indoor second storey living space, facing Huron Street	67	45	34 (south wall)	23 (south window)

Notes and Assumptions:

- A typical vinyl siding wall section (vinyl, exterior sheathing, 2x6 studs @ 16" o/c, insulation with 6mm vapour barrier and 1/2" gypsum board) provides an STC rating of 38.
- Adding a second layer of interior gypsum board to a typical vinyl wall section would add 2 points to the provided STC rating.
- Adding resilient channels to a typical vinyl siding wall section would add 5 points to the provided STC rating.
- A typical brick wall section (3 ½" brick veneer, 1" airspace, exterior sheathing, 2x6 studs at 16" o/c, and insulation with a 6mm vapour barrier and ½" gypsum board) provides an STC rating of 53.
- A typical double pane window with a glass/air-space/glass dimension of 3(13)3 generally provides an STC rating of 28. A typical glass patio french door provides an STC rating of 26.

The results summarized in **Table 4.3** indicate that units facing Huron Street could require special building components to meet the minimum STC rating requirements. As previously mentioned, these calculations are based on preliminary architectural plans and actual STC requirements, based on final plans, will be required prior to the issuance of building permits.

4.2.2 Noise Attenuation Barrier

As described in Section 4.1.2, an analysis for additional noise attenuation in the form of a noise attenuation barrier would only be required if a resulting noise level exceeds 60dBA at a proposed outdoor amenity space. As such, no barriers will be required for the proposed common exterior amenity space or for rear yards at Units 1 through 8.

4.2.3 Noise Warning Clauses and Ventilation Requirements

Noise calculations indicate that the indoor noise levels at POA1 exceed the maximum allowable indoor daytime noise level of 55dBA (corresponding to plane of window limit of 65dBA). As such, all units nearest Huron Street, including Units 10, 12, 14, 16, 18, and 20, shall have central air conditioning installed prior to occupancy and a Type D Noise Warning Clause shall be registered on title.

Noise calculations indicate that the indoor noise levels at POA2 and POA3 exceed the indoor daytime noise level of 45dBA (corresponding to plane of window limit of 55dBA). As such, all units not fronting Huron Street as discussed above, including Units 1 through 9, 11, 13, 15, 17, and 19, shall be fitted with a forced air heating system to permit the future installation of central air conditioning and a Type C Noise Warning Clause shall be registered on title.

Noise calculations indicate that the outdoor noise levels at OLA1 and OLA2 will exceed the outdoor daytime noise level of 55dBA, which warrants the need for a Type A Noise Warning Clause to be registered on title for all units within the development.

5.0 CONCLUSIONS

1. An analysis for attenuating noise barrier requirements is not required for the subject site.
2. Units 10, 12, 14, 16, 18, and 20 will require an analysis to determine the extent, if required, of special building components (walls, windows and doors) designed to achieve indoor sound level criteria (45dBA for daytime living spaces / 40dBA for nighttime living spaces). **Prior to the issuance of building permits, architectural details of these components are to be verified by a qualified Acoustical Professional to ensure the required sound transmission loss rating will be acceptable to meet indoor sound levels.** Furthermore, these units shall be fitted with central air conditioning and a Type D Noise Warning Clause shall be registered on title.
3. Units 1 through 9, 11, 13, 15, 17, and 19 will require forced air heating as well as provisions for the future installation of central air conditioning by the owner. Furthermore, a Type C Noise Warning Clause shall be registered on title.
4. A Type A Noise Warning Clause shall be registered on title for all units.

Noise Warning Clauses

5. The following noise warning clauses shall be registered on title for the units where the resulting noise level exceeds the recommended criteria. The clauses shall be worded as follows:

Units 10, 12, 14, 16, 18, and 20:

Noise Warning Clause TYPE A+D: “Purchasers/tenants are advised that sound levels due to increasing road traffic may occasionally interfere with some activities of the dwelling occupants as the sound levels exceed the sound level limits of the Municipality and the Ministry of the Environment, Conservation and Parks. 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.”

Units 1 through 9, 11, 13, 15, 17, and 19:

Noise Warning Clause TYPE A+C: “Purchasers/tenants are advised that sound levels due to increasing road traffic may occasionally interfere with some activities of the dwelling occupants as the sound levels exceed the sound level limits of the Municipality and the Ministry of the Environment, Conservation and Parks. 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.”

5.1 Signatures

All of which is respectfully submitted,

MTE Consultants Inc.



Linda Bishop, B.Sc
Environmental Scientist
lbishop@mte85.com

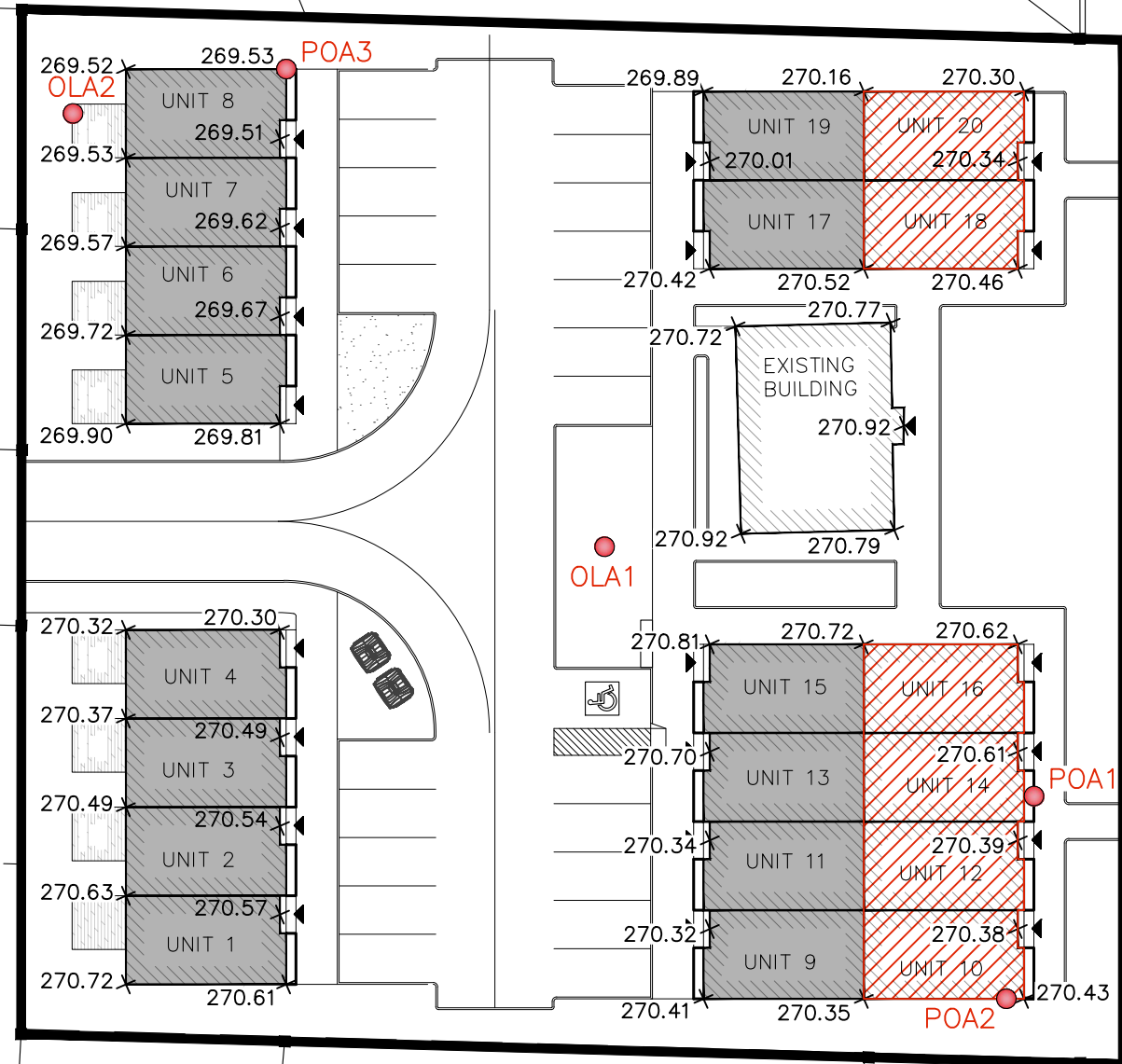


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Drawing




270.37
270.37
270.36
270.31
270.31
270.26
270.17
270.17
270.06
270.00
269.94

HURON STREET

LEGEND

	SITE BOUNDARY
	POINT OF ASSESSMENT (POA)
	TYPE A+ D WARNING CLAUSE, UNITS REQUIRING SPECIAL BUILDING COMPONENTS AND A/C
	TYPE A+ C WARNING CLAUSE PROVISIONS FOR A/C REQUIRED



MTE
Engineers, Scientists, Surveyors

PROJECT
1458 HURON STREET

TITLE
NOISE ASSESSMENT PLAN

Drawn AH	Scale 1:400	Figure	NA1.1
Checked LB	Project No. 54428-200		
Date 2024-01-22	Rev No. 0		

Appendix A

Traffic Data

Linda Bishop

From: Harpal, Dhaval <dharpal@london.ca>
Sent: Thursday, January 11, 2024 2:02 PM
To: Linda Bishop
Cc: Bogdan Pavlovic
Subject: FW: 54428-200 Noise Study - Traffic info request

You don't often get email from dharpal@london.ca. [Learn why this is important](#)

Hi Linda,

I have received your inquiry to provide traffic data for the noise study. Please find it below.

Huron St front of MN 1458

Most recent AADT: 16,000 vehicles
Recommended annual growth projection (e.g. 2% per year for 10 years): 1.5%
Percentage of heavy trucks: 1.5%
Percentage of medium trucks: 1.5%
Posted speed limit: 60km/h
Day/night splits: 96/4%

Let me know if something is missing.

Thank you,



London
CANADA

Dhaval Harpal
Technologist II
Transportation Planning and Design
City of London

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As part of our ongoing efforts to stop the spread of COVID-19, the City of London has made changes to many City services. Visit our [website for the latest information about City services and COVID-19](#).

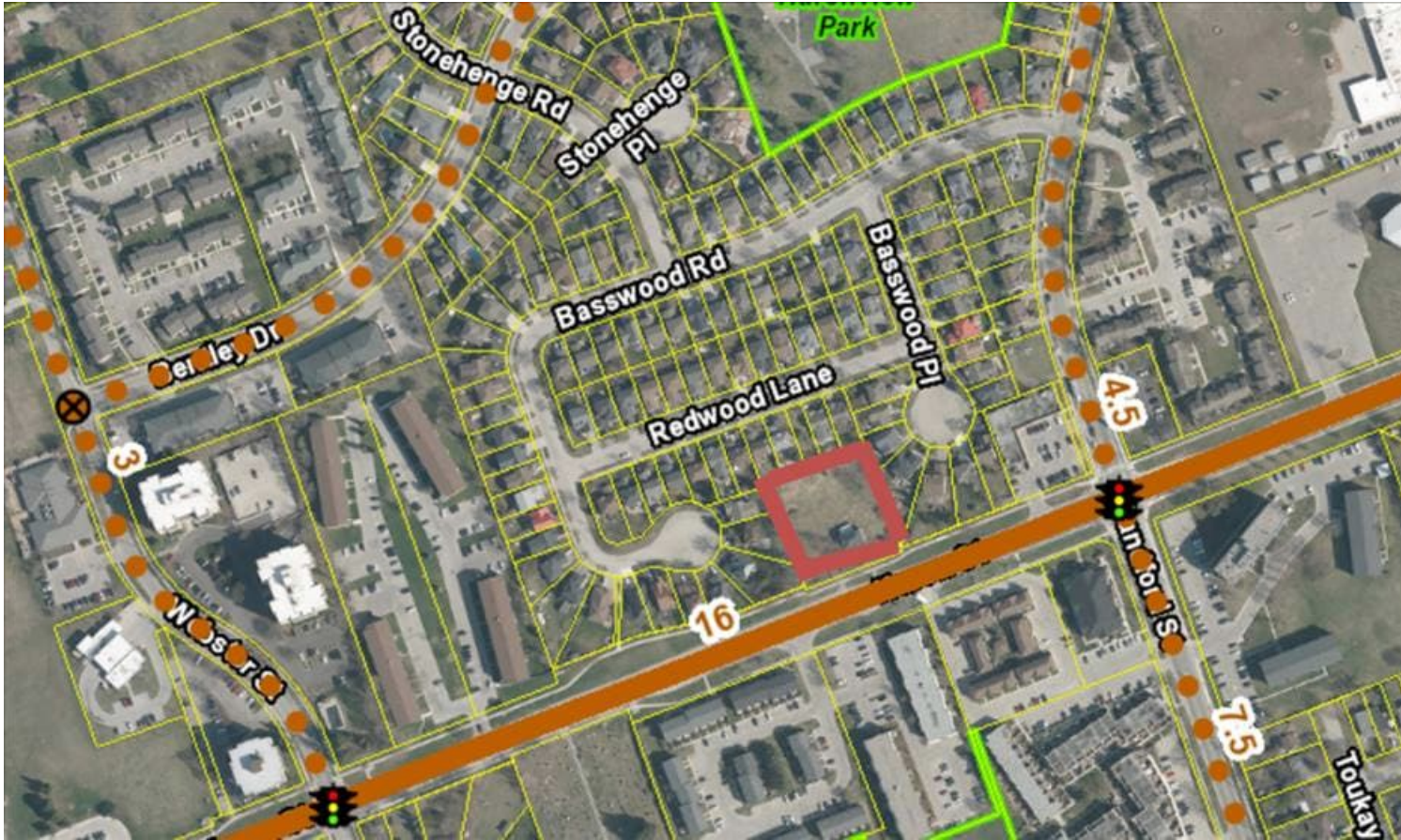
From: Linda Bishop <LBishop@mte85.com>
Sent: Thursday, December 14, 2023 8:47 AM
To: Traffic Signals <TrafficSignals@london.ca>
Cc: Bogdan Pavlovic <BPavlovic@mte85.com>
Subject: [EXTERNAL] 54428-200 Noise Study - Traffic info request

Good morning,

MTE has been retained to complete a road traffic noise study for a property at 1458 Huron Street. See map below for the project location (red boundaries).

Could you please provide us with the following information to complete the study:

Intersection of Huron Street and Sandford Street
Most recent AADT
Recommended annual growth projection (e.g. 2% per year for 10 years)
Percentage of heavy trucks
Percentage of medium trucks
Posted speed limit



Thank you,

Linda

Linda Bishop | Environmental Scientist

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Appendix B

STAMSON Output Files

STAMSON 5.0 COMPREHENSIVE REPORT Date: 31-01-2024 21:23:46 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: hrpoal.te Time Period: Day/Night 16/8 hours Description: 1458 Huron Road POA1

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

Car traffic volume : 17291/720 veh/TimePeriod *
Medium truck volume : 267/11 veh/TimePeriod *
Heavy truck volume : 267/11 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16000
Percentage of Annual Growth : 1.50
Number of Years of Growth : 10.00
Medium Truck % of Total Volume : 1.50
Heavy Truck % of Total Volume : 1.50
Day (16 hrs) % of Total Volume : 96.00
Data for Segment # 1: Huron (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 : 19.50 / 19.50 m
Receiver height : 4.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier) Reference angle : 0.00

Segment # 1: Huron (day) -----

Source height = 1.11 m

ROAD (0.00 + 66.46 + 0.00) = 66.46 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -----
0.00 67.60 0.00 -1.14 0.00 0.00 0.00 0.00 66.46 -----

Segment Leq : 66.46 dBA

Total Leq All Segments: 66.46 dBA

Segment # 1: Huron (night) -----

Source height = 1.10 m

ROAD (0.00 + 55.64 + 0.00) = 55.64 dBA

Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -----
0.00 56.78 0.00 -1.14 0.00 0.00 0.00 0.00 55.64 -----

Segment Leq : 55.64 dBA

Total Leq All Segments: 55.64 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 66.46
(NIGHT): 55.64

Filename: hrpoa2.te Time Period: Day/Night 16/8 hours Description: 1458 Huron Road POA2

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

Car traffic volume : 17291/720 veh/TimePeriod *
Medium truck volume : 267/11 veh/TimePeriod *
Heavy truck volume : 267/11 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16000
Percentage of Annual Growth : 1.50
Number of Years of Growth : 10.00
Medium Truck % of Total Volume : 1.50
Heavy Truck % of Total Volume : 1.50
Day (16 hrs) % of Total Volume : 96.00
Data for Segment # 1: Huron (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 : 4.50 / 4.50 m
Topography : 2 (Flat/gentle slope; with barrier) Barrier angle1 : -90.00 deg
Angle2 : 0.00 deg
Barrier height : 10.00 m
Barrier receiver distance : 0.01 / 0.01 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

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

Car traffic volume : 17291/720 veh/TimePeriod *
Medium truck volume : 267/11 veh/TimePeriod *
Heavy truck volume : 267/11 veh/TimePeriod * Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16000
Percentage of Annual Growth : 1.50

Number of Years of Growth : 10.00
Medium Truck % of Total Volume : 1.50
Heavy Truck % of Total Volume : 1.50
Day (16 hrs) % of Total Volume : 96.00

Data for Segment # 2: Huron (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 : 4.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier) Reference angle : 0.00

Segment # 1: Huron (day)

Source height = 1.11 m

Barrier height for grazing incidence

Table with 4 columns: Source Height (m), Receiver Height (m), Barrier Height (m), Barrier Top (m). Values: 1.11, 4.50, 4.50, 4.50

Table with 11 columns: ROAD (0.00 + 44.94 + 0.00) = 44.94 dBA, Angle1, Angle2, Alpha, RefLeq, P.Adj, D.Adj, F.Adj, W.Adj, H.Adj, B.Adj, SubLeq. Values include 0.00, 67.60, 0.00, -1.25, -3.01, 0.00, 0.00, -18.40, 44.94, -90, 0

Segment Leq : 44.94 dBA

Segment # 2: Huron (day)

Source height = 1.11 m

Table with 11 columns: ROAD (0.00 + 63.34 + 0.00) = 63.34 dBA, Angle1, Angle2, Alpha, RefLeq, P.Adj, D.Adj, F.Adj, W.Adj, H.Adj, B.Adj, SubLeq. Values include 0, 90, 0.00, 67.60, 0.00, -1.25, -3.01, 0.00, 0.00, 0.00, 63.34

Segment Leq : 63.34 dBA

Total Leq All Segments: 63.40 dBA

Segment # 1: Huron (night)

Source height = 1.10 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m) -----+-----
-----+-----
1.10 ! 4.50 ! 4.50 ! 4.50

ROAD (0.00 + 34.12 + 0.00) = 34.12 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -----
----- -90 0
0.00 56.78 0.00 -1.25 -3.01 0.00 0.00 -18.40 34.12 -----

Segment Leq : 34.12 dBA

Segment # 2: Huron (night)

Source height = 1.10 m

ROAD (0.00 + 52.52 + 0.00) = 52.52 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -----
----- 0 90 0
.00 56.78 0.00 -1.25 -3.01 0.00 0.00 0.00 52.52 -----

Segment Leq : 52.52 dBA

Total Leq All Segments: 52.58 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 63.40
(NIGHT): 52.58

STAMSON 5.0 COMPREHENSIVE REPORT Date: 31-01-2024 21:24:57 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: hrpoa3.te Time Period: Day/Night 16/8 hours Description: 1458 Huron Road POA3

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

Car traffic volume : 17291/720 veh/TimePeriod *
Medium truck volume : 267/11 veh/TimePeriod *
Heavy truck volume : 267/11 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16000
Percentage of Annual Growth : 1.50
Number of Years of Growth : 10.00
Medium Truck % of Total Volume : 1.50
Heavy Truck % of Total Volume : 1.50
Day (16 hrs) % of Total Volume : 96.00
Data for Segment # 1: Huron (day/night) -----

Angle1 Angle2 : -90.00 deg 3.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface) Receiver source distance : 62.00 / 62.00 m
Receiver height : 4.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier) Reference angle : 0.00

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

Car traffic volume : 17291/720 veh/TimePeriod *
Medium truck volume : 267/11 veh/TimePeriod *
Heavy truck volume : 267/11 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16000 Percentage of Annual Growth : 1.50
50
Number of Years of Growth : 10.00
Medium Truck % of Total Volume : 1.50
Heavy Truck % of Total Volume : 1.50
Day (16 hrs) % of Total Volume : 96.00

Data for Segment # 2: Huron (day/night) -----

--
Angle1 Angle2 : 3.00 deg 67.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface) Receiver source distance : 62.00 / 62.00 m
Receiver height : 4.50 / 4.50 m
Topography : 2 (Flat/gentle slope; with barrier) Barrier angle1 : 3.00 deg
Angle2 : 67.00 deg
Barrier height : 10.00 m
Barrier receiver distance : 23.00 / 23.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

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

Car traffic volume : 17291/720 veh/TimePeriod *
Medium truck volume : 267/11 veh/TimePeriod *
Heavy truck volume : 267/11 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 16000
Percentage of Annual Growth : 1.50
Number of Years of Growth : 10.00
Medium Truck % of Total Volume : 1.50
Heavy Truck % of Total Volume : 1.50
Day (16 hrs) % of Total Volume : 96.00

Data for Segment # 3: Huron (day/night) -----
--
Angle1 Angle2 : 67.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0 Surface : 2 (Reflective ground surface) Receiver
source distance : 62.00 / 62.00 m
Receiver height : 4.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier) Reference angle : 0.00

Segment # 1: Huron (day)

Source height = 1.11 m

ROAD (0.00 + 58.57 + 0.00) = 58.57 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -----
----- -90 3
0.00 67.60 0.00 -6.16 -2.87 0.00 0.00 0.00 58.57 -----

Segment Leq : 58.57 dBA

Segment # 2: Huron (day)

Source height = 1.11 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m) -----+-----
-----+-----+-----
1.11 ! 4.50 ! 3.24 ! 3.24

ROAD (0.00 + 38.78 + 0.00) = 38.78 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -----
----- 3 67 0
.00 67.60 0.00 -6.16 -4.49 0.00 0.00 -18.16 38.78 -----

Segment Leq : 38.78 dBA

Segment # 3: Huron (day)

Source height = 1.11 m

ROAD (0.00 + 52.50 + 0.00) = 52.50 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -----
----- 67 90
0.00 67.60 0.00 -6.16 -8.94 0.00 0.00 0.00 52.50 -----

Segment Leq : 52.50 dBA

Total Leq All Segments: 59.57 dBA

Segment # 1: Huron (night)

Source height = 1.10 m

ROAD (0.00 + 47.75 + 0.00) = 47.75 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -----
----- -90 3
0.00 56.78 0.00 -6.16 -2.87 0.00 0.00 0.00 47.75 -----

Segment Leq : 47.75 dBA

Segment # 2: Huron (night)

Source height = 1.10 m

Barrier height for grazing incidence

Source !	Receiver !	Barrier !	Elevation of
Height (m) !	Height (m) !	Height (m) !	Barrier Top (m)
1.10 !	4.50 !	3.24 !	3.24

ROAD (0.00 + 27.96 + 0.00) = 27.96 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
.00	56.78	0.00	-6.16	-4.49	0.00	0.00	-18.16	27.96		3 67 0

Segment Leq : 27.96 dBA

Segment # 3: Huron (night)

Source height = 1.10 m

ROAD (0.00 + 41.68 + 0.00) = 41.68 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0.00	56.78	0.00	-6.16	-8.94	0.00	0.00	0.00	41.68		67 90

Segment Leq : 41.68 dBA

Total Leq All Segments: 48.75 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 59.57
(NIGHT): 48.75

STAMSON 5.0 COMPREHENSIVE REPORT Date: 31-01-2024 21:24:17 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: hrolal.te Time Period: 16 hours
Description: 1458 Huron Road OLA1

Road data, segment # 1: Huron

Car traffic volume : 17291 veh/TimePeriod *
 Medium truck volume : 267 veh/TimePeriod *
 Heavy truck volume : 267 veh/TimePeriod *
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Huron

Angle1 Angle2 : -90.00 deg -80.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0
 Surface : 2 (Reflective ground surface) Receiver source distance : 44.00 m
 Receiver height : 1.50 m
 Topography : 1 (Flat/gentle slope; no barrier) Reference angle : 0.00

Road data, segment # 2: Huron

Car traffic volume : 17291 veh/TimePeriod *
 Medium truck volume : 267 veh/TimePeriod *
 Heavy truck volume : 267 veh/TimePeriod *
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Huron

Angle1 Angle2 : -80.00 deg -7.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0
 Surface : 2 (Reflective ground surface) Receiver source distance : 44.00 m
 Receiver height : 1.50 m
 Topography : 2 (Flat/gentle slope; with barrier) Barrier angle1 : -80.00 deg
 Angle2 : -7.00 deg
 Barrier height : 10.00 m
 Barrier receiver distance : 7.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m Barrier elevation : 0.00 m
 Reference angle : 0.00

Road data, segment # 3: Huron

Car traffic volume : 17291 veh/TimePeriod *

Medium truck volume : 267 veh/TimePeriod *
Heavy truck volume : 267 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 3: Huron

Angle1 Angle2 : -7.00 deg 12.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 2 (Reflective ground surface) Receiver source distance : 44.00 m
Receiver height : 1.50 m
Topography : 1 (Flat/gentle slope; no barrier) Reference angle : 0.00

Road data, segment # 4: Huron

Car traffic volume : 17291 veh/TimePeriod *
Medium truck volume : 267 veh/TimePeriod *
Heavy truck volume : 267 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 4: Huron

Angle1 Angle2 : 12.00 deg 75.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 2 (Reflective ground surface) Receiver source distance : 44.00 m
Receiver height : 1.50 m
Topography : 2 (Flat/gentle slope; with barrier) Barrier angle1 : 12.00 deg
Angle2 : 75.00 deg
Barrier height : 10.00 m
Barrier receiver distance : 8.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

Road data, segment # 5: Huron

Car traffic volume : 17291 veh/TimePeriod * Medium truck volume : 267 veh/
TimePeriod *
Heavy truck volume : 267 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 5: Huron

Angle1 Angle2 : 75.00 deg 90.00 deg

Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 2 (Reflective ground surface) Receiver source distance : 44.00 m
Receiver height : 1.50 m
Topography : 1 (Flat/gentle slope; no barrier) Reference angle : 0.00

Segment # 1: Huron

Source height = 1.11 m

ROAD (0.00 + 50.37 + 0.00) = 50.37 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -----
----- -90 -
80 0.00 67.60 0.00 -4.67 -12.55 0.00 0.00 0.00 50.37 -----

Segment Leq : 50.37 dBA

Segment # 2: Huron

Source height = 1.11 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m) -----+-----
-----+-----
1.11 ! 1.50 ! 1.44 ! 1.44

ROAD (0.00 + 39.22 + 0.00) = 39.22 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -----
----- -80 -7
0.00 67.60 0.00 -4.67 -3.92 0.00 0.00 -19.79 39.22 -----

Segment Leq : 39.22 dBA

Segment # 3: Huron

Source height = 1.11 m

ROAD (0.00 + 53.16 + 0.00) = 53.16 dBA Angle1 Angle2 Alpha RefLeq P.Adj D.Adj
F.Adj W.Adj H.Adj B.Adj SubLeq -----
----- -7 12 0.00 67.60 0.00 -4.67 -9.77 0.00 0.00 0
.00 53.16 -----

Segment Leq : 53.16 dBA

Segment # 4: Huron

Source height = 1.11 m

Barrier height for grazing incidence

Source !	Receiver !	Barrier !	Elevation of
Height (m) !	Height (m) !	Height (m) !	Barrier Top (m)
1.11 !	1.50 !	1.43 !	1.43

ROAD (0.00 + 38.44 + 0.00) = 38.44 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0.00	67.60	0.00	-4.67	-4.56	0.00	0.00	-19.92	38.44		12 75

Segment Leq : 38.44 dBA

Segment # 5: Huron

Source height = 1.11 m

ROAD (0.00 + 52.13 + 0.00) = 52.13 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0.00	67.60	0.00	-4.67	-10.79	0.00	0.00	0.00	52.13		75 90

Segment Leq : 52.13 dBA

Total Leq All Segments: 56.94 dBA

TOTAL Leq FROM ALL SOURCES: 56.94

STAMSON 5.0 COMPREHENSIVE REPORT Date: 31-01-2024 21:26:39 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: hrola2.te Time Period: 16 hours
Description: 1458 Huron Road OLA2

Road data, segment # 1: Huron

Car traffic volume : 17291 veh/TimePeriod *
 Medium truck volume : 267 veh/TimePeriod *
 Heavy truck volume : 267 veh/TimePeriod *
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Huron

Angle1 Angle2 : -90.00 deg -44.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0
 Surface : 2 (Reflective ground surface) Receiver source distance : 74.50 m
 Receiver height : 1.50 m
 Topography : 1 (Flat/gentle slope; no barrier) Reference angle : 0.00

Road data, segment # 2: Huron

Car traffic volume : 17291 veh/TimePeriod *
 Medium truck volume : 267 veh/TimePeriod *
 Heavy truck volume : 267 veh/TimePeriod *
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Huron

Angle1 Angle2 : -44.00 deg 86.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0
 Surface : 2 (Reflective ground surface) Receiver source distance : 74.50 m
 Receiver height : 1.50 m
 Topography : 2 (Flat/gentle slope; with barrier) Barrier angle1 : -44.00 deg
 Angle2 : 86.00 deg
 Barrier height : 10.00 m
 Barrier receiver distance : 3.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m Barrier elevation : 0.00 m
 Reference angle : 0.00

Road data, segment # 3: Huron

Car traffic volume : 17291 veh/TimePeriod *

Medium truck volume : 267 veh/TimePeriod *
Heavy truck volume : 267 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 3: Huron

Angle1 Angle2 : 86.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 2 (Reflective ground surface) Receiver source distance : 74.50 m
Receiver height : 1.50 m
Topography : 1 (Flat/gentle slope; no barrier) Reference angle : 0.00

Segment # 1: Huron

Source height = 1.11 m

ROAD (0.00 + 54.71 + 0.00) = 54.71 dBA Angle1 Angle2 Alpha RefLeq P.Adj D.Adj
F.Adj W.Adj H.Adj B.Adj SubLeq -----
----- -90 -44 0.00 67.60 0.00 -6.96 -5.93 0.00 0.00
0.00 54.71 -----

Segment Leq : 54.71 dBA

Segment # 2: Huron

Source height = 1.11 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m) -----+-----
-----+-----
1.11 ! 1.50 ! 1.48 ! 1.48

ROAD (0.00 + 39.51 + 0.00) = 39.51 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -----
----- -44 86
0.00 67.60 0.00 -6.96 -1.41 0.00 0.00 -19.71 39.51 -----

Segment Leq : 39.51 dBA

Segment # 3: Huron

Source height = 1.11 m

ROAD (0.00 + 44.11 + 0.00) = 44.11 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -----
----- 86 90
0.00 67.60 0.00 -6.96 -16.53 0.00 0.00 0.00 44.11 -----

Segment Leq : 44.11 dBA

Total Leq All Segments: 55.19 dBA

TOTAL Leq FROM ALL SOURCES: 55.19

Appendix C

Sample STC Calculations

Proposed second story living space in Unit 14, 1458 Huron Street, London ON
SAMPLE SOUND TRANSMISSION CLASS CALCULATION
Huron Street Noise Source

Project Number: 54428-200
 Date: January 26, 2024
 Design By: LMB

1.	Free field sound level	<u>67</u>	dBA		
	Correction for reflections	<u>3</u>	dBA		
	Outdoor sound level	<u>70</u>	dBA		
	Indoor sound level	<u>45</u>	dBA	Subtract indoor from outdoor sound level	
	Required Noise Reduction (NR)	<u>25</u>	dB		
2.	Sound comes from	<u>0 to 90 degrees</u>	angle	C ₁ Correction from Table 7.7	<u>0</u> dB
				Sum	<u>25</u> dB
Component: <u>South Wall</u>					
3.	Transmits	<u>50</u>	% of total sound energy	C ₂ from Table 7.8	<u>3</u> dB
4.	Component area	<u>9.7</u>	m ²	<u>46</u>	% of floor area
	Room floor area	<u>21.15</u>	m ²		
	Room absorption category		<u>intermediate</u>	C ₃ from Table 7.9	<u>-1</u> dB
5.	Noise spectrum type	<u>D</u>	(select from Fig. 7.5)		
	Component category	<u>d</u>	(select from Table 7.10)	C ₄ from Table 7.10	<u>7</u> dB
				Required STC	<u>34</u>
Component: <u>South Window</u>					
3.	Transmits	<u>50</u>	% of total sound energy	C ₂ from Table 7.8	<u>3</u> dB
4.	Component area	<u>2.25</u>	m ²	<u>11</u>	% of floor area
	Room floor area	<u>21.15</u>	m ²		
	Room absorption category		<u>intermediate</u>	C ₃ from Table 7.9	<u>-9</u> dB
5.	Noise spectrum type	<u>D</u>	(select from Fig. 7.5)		
	Component category	<u>c</u>	(select from Table 7.10)	C ₄ from Table 7.10	<u>4</u> dB
				Required STC	<u>23</u>