

January 25, 2020

Regional Municipality of Durham
Development Department
605 Rossland Road
Whitby, Ontario L1N 6A3

**Re: Environmental Noise Assessment
Proposed Residential Development
150 Cemetery Road
Township of Uxbridge
Project No. Y2022**

1.0 INTRODUCTION

We are pleased to submit for your review a letter describing the results of our investigation of the noise environment for the above noted site based on the latest Survey Plan dated November 2020. The present report recommends noise abatement measures to meet the sound levels acceptable to the Regional of Durham, Township of Uxbridge and the Ministry of Environment.

The proposed development will be comprised of residential lots located west of Cemetery Road at approximately 130m northwest of Toronto Street (Durham Highway 47). The surrounding land uses are existing and proposed residential developments with existing commercial to the southeast. The location of the proposed development is further indicated by the key plan below.



2.0 TRAFFIC NOISE SOURCES

The study addresses noise generated by vehicular traffic on Toronto Street (Durham Highway No.47) approximately 130m to the east in the Township of Uxbridge. Noise generated by Cemetery Road is not expected to be significant due to low traffic volume. Traffic volume information was obtained from the Planning Department of the Regional Municipality of Durham dated January 2021 and summarized in Table 1 below.

Projected Annual Average Daily Traffic *	16,000
Percent Trucks	15%
Percent of Heavy and Medium trucks	80:20
Speed (km/hr)	50
Number of Lanes	4

* The projected traffic data provided by the Region of Durham.

The GO Transit/York-Durham Heritage Railway is located approximately 200m west of the proposed residential development. The York-Durham Heritage Railway trains operate with limited seasonal services on the weekends and holidays only with a maximum of 4 trains per day, 2 locomotives and a maximum speed of 80 km/h. There are no GO transit trains and freight train pass-bys for this section of railway. Therefore, the noise impact from the railway is considered acoustically insignificant and railway warning clauses are not required.

Sound levels were calculated using the Ministry of Environment's Stamson 5.04 computer based noise prediction model and evaluated with the sound level criteria and warning clauses recommended by the Ministry of Environment. The analysis and warning clauses are included in this letter.

LOCATIONS	DISTANCE TO CENTRELINE OF ROAD (m)	DAYTIME 16 Hr. Leq dBA		NIGHT-TIME 8 Hr. Leq dBA
		REAR YARD	DWELLING WALL	SECOND STOREY
Block 2 (East Unit)	190.0 ¹		53.45	48.08
	270.0 ²	-	47.64 (54.46)	
Block 3 (West Unit)	272.0 ¹	-	49.14	45.79
	212.0 ²		49.44 (52.30)	
	274.0 ¹	<55	-	-
	214.0 ²			
Block 4 (West Unit)	200.0 ¹	-	51.17	47.75
	220.0 ¹		49.17 (53.29)	
	202.0 ¹	<55	-	-
	222.0 ²			
Block 6 (East Unit)	135.0 ¹	-	55.77	50.26
	300.0 ¹		46.83 (56.29)	
	137.0 ¹	<55	-	-
	302.0 ²			

2.1 VENTILATION REQUIREMENTS

Based on the noise analysis in Table 2, the daytime sound level for Block 6 is expected to be slightly above 55 dBA during the daytime and above 50 dBA during night-times. All other residential units are expected to be less than 55dBA during the daytime and less than 50 dBA during the night-time. Therefore, provision for air conditioning is required for Block 6 due to road and rail traffic.

In addition, the following warning clause must be incorporated into the Development Agreement, which will be registered on title and should be included in all offers of purchase, sale and lease of Block 6:

Warning Clause Type C:

“This unit was fitted with ducting sized to accommodate a central ventilation system to allow windows and exterior doors to be kept closed, thereby achieving indoor sound levels within the limits recommended by the Ministry of Environment”

2.2 OUTDOOR MEASURES

The daytime rear yard sound level at all the back yard are expected to be less than 55dBA in the absence of mitigative measures. Therefore, outdoor noise mitigation measures are not required due to road and rail traffic.

2.3 BUILDING COMPONENTS

Building components within the proposed development were investigated using the STC (Sound Transmission Class) method recommended by the M.O.E. Although the detailed floor plans are not yet available for the proposed development, the following general comments can be made at this time: a living, dining or recreation room is located at the side of the house closest to the roadway and contains three components (two exterior walls at 80% of floor area and a set of windows at 25% of the floor area). In order to ensure acceptable daytime indoor sound levels, the various building components must provide a STC rating of 33 for windows and a STC rating of 38 for the exterior wall construction and for night-time second storey sound levels, the various building components must provide a STC rating of 30 for windows and a STC rating of 35 for exterior wall construction.

STC ratings of 30 or less for windows and STC ratings of 38 or less for exterior walls are standard Ontario Building Code (OBC) construction, therefore the windows for the residential unit fronting Toronto Street will need to be upgraded to STC 33.

3.0 STATIONARY NOISE SOURCES

SOUND LEVEL CRITERIA

Sound level limits used in this noise assessment are provided in the latest M.E.C.P. publication NPC-300. The sound level limits for a Class 2 area due to stationary sources for an Outdoor Point of Reception is sound level (L_{EQ}), 50 dBA during daytime (0700-1900) and 45 dBA during evenings (1900-2300). The sound level limits for a Class 2 area due to stationary sources for Plane of Window of Noise Sensitive Spaces is sound level (L_{EQ}), 50 dBA during daytime (0700-1900), 50 dBA during evenings (1900-2300) and 45 dBA during night-time (2300-0700).

3.1 STATIONARY NOISE SOURCES ASSESSMENT

Existing retail commercial buildings are located east of Cemetery Road at 65m to the southeast. The commercial development consist of offices, a Bulk Barn, cleaners, fast food restaurants and convenience store. A fast food restaurant and Country Style coffee shop with drive thru facility located at the northeast corner of Highway No. 47 and Cemetery Road with daytime and evening operation hours. There are a mechanical units on the west side of one of the commercial building facing the proposed residential development.

The noise impact from the surrounding existing commercial developments with the mechanical roof top units have the potential to exceed the sound level limits at the proposed development.

Based on the location of the buildings and the mechanical roof top units as shown on the attached Figure 2, the Sound Power Levels for all the roof top units were taken to be an average of 84dBA for a similar type of mechanical equipment. All roof top units are assumed to be operating 100% of the time during the daytime/evening and operating 50% of the time during the night-time. The truck activities are assumed to be daytime operations. Analysis is included in Appendix 3.

The sound levels were calculated using the CadnaA Version 2020 computer program using the International Standard ISO 9613-2.

TABLE 3 - STATIONARY SOURCES SOUND LEVELS (UMITIGATED)			
RECEPTOR	SOUND LEVEL RESULTS (dBA)		EXCEEDANCE (dBA)
	DAYTIME/EVENING (0700 -2300)	NIGHTTIME (2300 -0700)	
R1 (Blk 6, 3rd Storey)	43.3	40.2	No
R2 (Blk 2, 3rd Storey)	40.9	37.9	No
R3 (Blk 5, 3rd Storey)	44.5	41.5	No
R1a (Blk 6, Rear Yard)	43.4	40.4	No
R2a (Blk 2, Rear Yard)	33.3	30.3	No

The total sound level results from the mechanical roof top units and truck activities are expected to meet the sound level limit of 50dBA during the daytimes and 45dBA during night-times at all the proposed building facades and rear yards.

3.2 VENTILATION REQUIREMENTS

Based on the sound level results in Table 3, the sound levels are expected to be below the sound level limit of 50dBA during the daytimes and 45dBA during the night-times at the building facades of the proposed residential development. Therefore, there are no ventilation requirements due to stationary noise sources at the proposed residential development.

3.3 OUTDOOR MEASURES

The sound level at all the rear yards of the proposed residential development are expected to meet the sound level limits. Therefore, outdoor noise mitigation measures are not required at rear yards due to the existing stationary noise source.

3.4 BUILDING COMPONENTS

There are no building requirements due to stationary noise sources at the proposed residential development.

4.0 WARNING CLAUSES

We recommend the following warning clauses to be incorporated into the Development Agreement, which will be registered on title and included in all offers of purchase and sale or lease of suites noted below.

Warning Clause Type A:

“Purchasers/tenants are advised that despite the inclusion of noise control features, the sound levels due to increasing road traffic and existing commercial developments may continue to be of concern, occasionally interfering with the activities of the occupants as the noise levels may exceed the noise criteria of the Ministry of the Environment.”

We recommend the following warning clause to be incorporated into the Development Agreement, which will be registered on title and included in all offers of purchase and sale or lease of residential units within 300m of the railway:

Railway Warning Clause

“A clause should be inserted in all offers of purchase and sale or lease and in the title deed or lease of each dwelling within 300m of the railway right-of-way, warning prospective purchasers or tenants of the existence of the Railway’s operating right-of-way; the possibility of alterations including the possibility that the Railway may expand its operations, which expansion may affect the living environment of the residents notwithstanding the inclusion of noise and vibration attenuating measures in the design of the subdivision and individual units, and that the Railway will not be responsible for complaints or claims arising from the use of its facilities and/or operations.”

SUMMARY AND CONCLUSION

The summary of recommendations for ventilation, building components, outdoor control measures and warning clauses are included in Table 4:

LOCATIONS	VENTILATION REQUIREMENTS	BUILDING COMPONENTS*	SOUND BARRIERS	WARNING CLAUSES
Blocks 2, 3, 4, 5 (All Units)	No Requirements	No Requirements	-	Railway Warning Clause
Block 6 (All Units)	Provision for air conditioning	No Requirements	-	Type A,C and Railway Warning Clause

* OBC: Ontario Building Code Standard.

This report has determined that sound levels acceptable to the Ministry of Environment, Conservation and Parks, Township of Uxbridge and the Regional Municipality of Durham will be achieved using the abatement measures as described in this Environmental Noise Assessment.

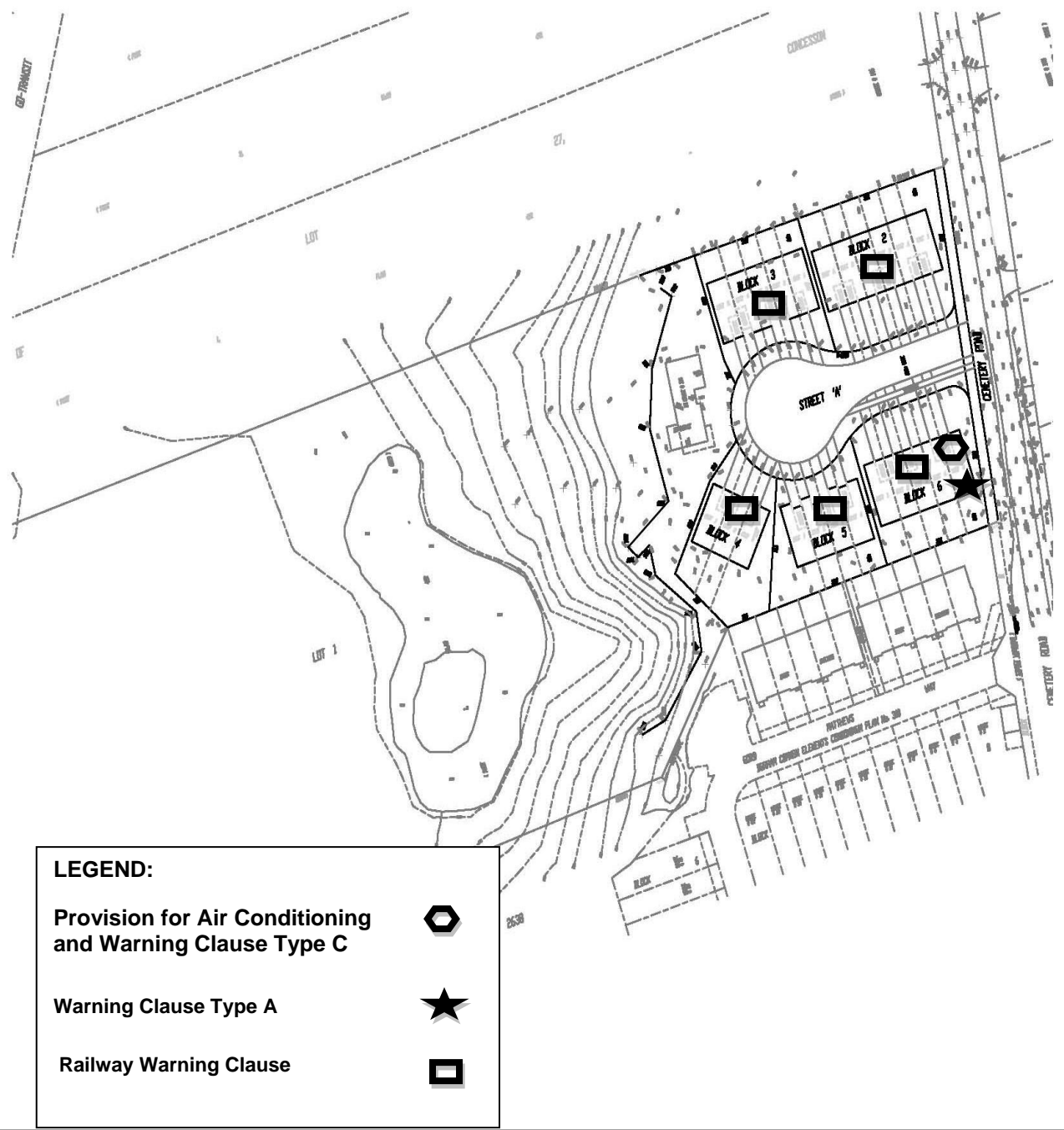
Should you have any questions regarding this report, please contact the undersigned.

Yours truly,

YCA ENGINEERING Limited

Hava Jouharchi, P.Eng.
Senior Project Engineer





**FIGURE 1 - 150 Cemetery Road-
Proposed Residential Development
NOISE MITIGATION MEASURES**



**FIGURE 2 -150 Cemetery Road-
Proposed Residential Development
SURROUNDING STATIONARY NOISE SOURCES**



The Regional Municipality of Durham

Planning and Economic Development Department

Planning Division

605 ROSSLAND RD. E.
4TH FLOOR
P.O. BOX 623
WHITBY, ON L1N 6A3
CANADA
905-668-7711
1-800-372-1102
Fax: 905-666-6208
E-Mail: planning@durham.ca

www.durham.ca

Brian Bridgeman, MCIP, RPP
Commissioner of Planning and Economic Development

ROAD SEGMENT TRAFFIC FORECASTS FOR NOISE ANALYSES

This information is to be used as the basis for assessing the potential impacts of noise, generated by traffic on Provincial Highways and arterial roads, on proposed land uses that are sensitive (e.g., residential subdivisions). Arterial roads include existing and future Type A, B and C, as designated in the Durham Regional Official Plan.

Noise assessment reports recommend specific measures to be integrated into the design of sensitive developments to reduce road noise impacts to acceptable levels.

Provided For:

Name / Name of Firm: Hava Jouharchi, YCA Engineering Ltd.
Address: 9251 Yonge Street, Suite 8557
Richmond Hill, ON, L4C 9T3
Telephone: (416) 894-3213 Fax:

Location of Proposal:

North of Highway No. 47, west of Cemetery Road in Uxbridge

Municipality: Uxbridge Lot(s): Concession:
Durham Region File No. (if available):
Name of Property Owner (if available):

Date Request Received: Monday, January 11, 2021 Received By: Victor Copetti

Date Forecast Sent: Tuesday, January 12, 2021

Table with 7 columns: Name of Road Segment, Forecasted AADT*, No. of Lanes, % of Trucks, Heavy : Medium Truck Ratio, Speed (km/h). Row 1: Highway 47 (west and east of Cemetery Road), 16,000, 4, 15, 80:20, 50. Rows 2-4: 0, 0, 0, 0, 0, 0.

* Average Annual Daily Traffic. Forecast based on ultimate development according to the Durham Regional Official Plan.

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

Train Type	Trains (Left)	Trains (Right)	Speed (km/h)	# loc /Train	# Cars /Train	Eng type	Cont weld
1. YRH	2.7/0.0	2.7/0.0	80.0	2.0	10.0	Diesel	Yes

Data for Segment # 1: YD Heritage (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 : 212.00 / 212.00 m
 Receiver height : 4.50 / 7.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Whistle Angle : 0 deg Track 1

Result summary (day)

	Loc Leq (dBA)	Wheel Leq (dBA)	Whistle Left Leq (dBA)	Whistle Right Leq (dBA)	Total Leq (dBA)
1.YD Heritage	44.38	33.10	44.66	44.66	49.44 *
Total					49.44 dBA

* Bright Zone !
 Result summary (night)

	Loc Leq (dBA)	Wheel Leq (dBA)	Whistle Left Leq (dBA)	Whistle Right Leq (dBA)	Total Leq (dBA)
1.YD Heritage	0.00	0.00	0.00	0.00	0.00 *
Total					0.00 dBA

* Bright Zone !

Road data, segment # 1: Highway 47 (day/night)

Car traffic volume : 12240/1360 veh/TimePeriod *
 Medium truck volume : 432/48 veh/TimePeriod *
 Heavy truck volume : 1728/192 veh/TimePeriod *
 Posted speed limit : 50 km/h
 Road gradient : 2 %
 Road pavement : 1 (Typical asphalt or concrete)
 * Refers to calculated road volumes based on the following input:
 24 hr Traffic Volume (AADT or SADT): 16000
 Percentage of Annual Growth : 0.00
 Number of Years of Growth : 0.00
 Medium Truck % of Total Volume : 3.00
 Heavy Truck % of Total Volume : 12.00
 Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Highway 47 (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 1 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 272.00 / 272.00 m
 Receiver height : 4.50 / 7.50 m
 Topography : 1 (Flat/gentle slope; no barrier)

Result summary (day)

	! source !	Road !	Total !
	! height !	Leq !	Leq !
	! (m) !	(dBA) !	(dBA) !
1.Highway 47	! 1.86 !	49.14 !	49.14
	Total		49.14 dBA

Result summary (night)

	! source !	Road !	Total !
	! height !	Leq !	Leq !
	! (m) !	(dBA) !	(dBA) !
1.Highway 47	! 1.86 !	45.79 !	45.79
	Total		45.79 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 52.30
(NIGHT): 45.79

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

Train Type	! Trains ! ! (Left)	! Trains ! ! (Right)	! Speed ! ! (km/h)	!# loc ! !/Train!	!# Cars! !/Train!	Eng type	!Cont ! !weld
1. YRH	2.7/0.0	2.7/0.0	80.0	2.0	10.0	Diesel	Yes

Data for Segment # 1: YD Heritage (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 : 300.00 / 300.00 m
 Receiver height : 4.50 / 7.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Whistle Angle : 0 deg Track 1

Result summary (day)

	! Loc ! ! Leq ! ! (dBA)	! Wheel ! ! Leq ! ! (dBA)	! Whistle ! ! Left Leq ! ! (dBA)	! Whistle ! ! Right Leq ! ! (dBA)	Total ! Leq ! (dBA)
1.YD Heritage	42.12	30.68	41.87	41.87	46.83 *
Total					46.83 dBA

* Bright Zone !

Result summary (night)

	! Loc ! ! Leq ! ! (dBA)	! Wheel ! ! Leq ! ! (dBA)	! Whistle ! ! Left Leq ! ! (dBA)	! Whistle ! ! Right Leq ! ! (dBA)	Total ! Leq ! (dBA)
1.YD Heritage	0.00	0.00	0.00	0.00	0.00 *
Total					0.00 dBA

* Bright Zone !

Road data, segment # 1: Highway 47 (day/night)

Car traffic volume : 12240/1360 veh/TimePeriod *
 Medium truck volume : 432/48 veh/TimePeriod *
 Heavy truck volume : 1728/192 veh/TimePeriod *
 Posted speed limit : 50 km/h
 Road gradient : 2 %
 Road pavement : 1 (Typical asphalt or concrete)
 * Refers to calculated road volumes based on the following input:
 24 hr Traffic Volume (AADT or SADT): 16000
 Percentage of Annual Growth : 0.00
 Number of Years of Growth : 0.00
 Medium Truck % of Total Volume : 3.00
 Heavy Truck % of Total Volume : 12.00
 Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Highway 47 (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 : 135.00 / 135.00 m
 Receiver height : 4.50 / 7.50 m
 Topography : 1 (Flat/gentle slope; no barrier)

Result summary (day)

	! source !	Road	! Total
	! height !	Leq	! Leq
	! (m) !	(dBA)	! (dBA)
1.Highway 47	! 1.86 !	55.77	! 55.77
	Total		55.77 dBA

Result summary (night)

	! source !	Road	! Total
	! height !	Leq	! Leq
	! (m) !	(dBA)	! (dBA)
1.Highway 47	! 1.86 !	50.26	! 50.26
	Total		50.26 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 56.29
 (NIGHT): 50.26

STAMSON 5.0 SUMMARY REPORT Date: 25-01-2021 14:14:47
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT
 Filename: bk6ry.te Time Period: Day/Night 16/8 hours
 Description: Block 6, Rear Yard

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

Train Type	Trains	Speed (km/h)	# loc / Train	# Cars / Train	Eng type	Cont weld
* 1. YRH	5.4/0.0	80.0	2.0	10.0	Diesel	Yes

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

Train No	Name	Unadj. Trains	Annual % Increase	Years of Growth
1.	YRH	4.0/0.0	2.50	12.00

Data for Segment # 1: YD Heritage (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 1 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 302.00 / 300.00 m
 Receiver height : 1.50 / 7.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 No Whistle

Result summary (day)

	Loc Leq (dBA)	Wheel Leq (dBA)	Whistle Left Leq (dBA)	Whistle Right Leq (dBA)	Total Leq (dBA)
1.YD Heritage	38.27	27.28	--	--	38.60 *
Total					38.60 dBA

* Bright Zone !

Road data, segment # 1: Highway 47 (day/night)

Car traffic volume : 12240/1360 veh/TimePeriod *
 Medium truck volume : 432/48 veh/TimePeriod *
 Heavy truck volume : 1728/192 veh/TimePeriod *
 Posted speed limit : 50 km/h
 Road gradient : 2 %
 Road pavement : 1 (Typical asphalt or concrete)
 * Refers to calculated road volumes based on the following input:
 24 hr Traffic Volume (AADT or SADT): 16000
 Percentage of Annual Growth : 0.00
 Number of Years of Growth : 0.00
 Medium Truck % of Total Volume : 3.00
 Heavy Truck % of Total Volume : 12.00
 Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Highway 47 (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 1 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 237.00 / 135.00 m
 Receiver height : 1.50 / 7.50 m
 Topography : 1 (Flat/gentle slope; no barrier)

Result summary (day)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.Highway 47	1.86	49.42	49.42
Total			49.42 dBA

STATIONARY NOISE SOURCES

Project No.: Y2022

Project Name: 150 Cemetery Road Residential Development

Date: January 2021

Receiver Table

Name	Level Lr		Limit. Value		Height (m)		Coordinates		
	Day (dBA)	Night (dBA)	Day (dBA)	Night (dBA)			X (m)	Y (m)	Z (m)
R1	43.3	40.2	50.0	45.0	7.50	r	396.78	796.20	7.50
R2	40.9	37.9	50.0	45.0	7.50	r	385.56	858.01	7.50
R3	44.5	41.5	50.0	45.0	7.50	r	366.14	784.44	7.50
R1a	43.4	40.4	50.0	45.0	1.50	r	391.63	786.69	1.50
R2a	33.3	30.3	50.0	45.0	1.50	r	378.85	873.66	1.50

Point Source Table

Name	Result. PWL			Lw / Li		Operating Time			Freq. (Hz)	Height		Coordinates		
	Day (dBA)	Evening (dBA)	Night (dBA)	Type	Value	Day (min)	Special (min)	Night (min)		(m)		X (m)	Y (m)	Z (m)
S1	80.2	80.2	80.2	Lw	RTU3	720.00	240.00	240.00		1.20	g	443.19	719.27	4.70
S2	82.2	82.2	82.2	Lw	RTU4	720.00	240.00	240.00		1.20	g	445.19	712.19	4.70
S3	82.2	82.2	82.2	Lw	RTU4	720.00	240.00	240.00		1.20	g	451.85	726.19	4.70
S4	80.2	80.2	80.2	Lw	RTU3	720.00	240.00	240.00		1.20	g	455.35	712.84	4.70
S5	84.9	84.9	84.9	Lw	RTU1	720.00	240.00	240.00		1.20	g	471.43	720.07	4.70
S13	85.7	85.7	85.7	Lw	RTU6	720.00	240.00	240.00		1.00	g	458.21	630.77	4.50
S14	85.7	85.7	85.7	Lw	RTU6	720.00	240.00	240.00		1.00	g	456.91	625.44	4.50
S15	86.9	86.9	86.9	Lw	RTU2	720.00	240.00	240.00		1.00	g	463.84	625.32	4.50
S16	84.9	84.9	84.9	Lw	RTU1	720.00	240.00	240.00		1.00	g	471.05	625.43	4.50
S6	80.2	80.2	80.2	Lw	RTU3	720.00	240.00	240.00		3.00	r	443.83	702.62	3.00
S7	78.3	78.3	78.3	Lw	RTU5	720.00	240.00	240.00		3.00	r	444.41	697.12	3.00
S8	82.2	82.2	82.2	Lw	RTU4	720.00	240.00	240.00		3.00	r	445.08	691.05	3.00
S9	84.9	84.9	84.9	Lw	RTU1	60.00	60.00	30.00		3.00	r	445.87	685.67	3.00
S10	80.2	80.2	80.2	Lw	RTU3	60.00	60.00	30.00		2.50	r	446.46	680.69	2.50
S11	80.2	80.2	80.2	Lw	RTU3	60.00	60.00	30.00		3.00	r	446.94	674.98	3.00
S12	86.9	86.9	86.9	Lw	RTU2	720.00	240.00	240.00		3.00	r	448.02	669.19	3.00
S17	86.9	86.9	86.9	Lw	RTU2	720.00	240.00	240.00		1.00	g	454.18	662.59	4.00
S18	80.2	80.2	80.2	Lw	RTU3	720.00	240.00	240.00		1.00	g	454.28	659.03	4.00
S19	84.9	84.9	84.9	Lw	RTU1	720.00	240.00	240.00		1.00	g	460.58	662.50	4.00
S20	78.3	78.3	78.3	Lw	RTU5	720.00	240.00	240.00		1.00	g	463.79	659.95	4.00
S21	78.3	78.3	78.3	Lw	RTU5	720.00	240.00	240.00		1.00	g	466.38	660.19	4.00
S22	86.9	86.9	86.9	Lw	RTU2	720.00	240.00	240.00		1.00	g	467.32	662.97	4.00
S23	86.9	86.9	86.9	Lw	RTU2	720.00	240.00	240.00		1.00	g	518.19	762.07	4.50
S24	85.7	85.7	85.7	Lw	RTU6	720.00	240.00	240.00		1.00	g	515.46	757.66	4.50
S25	84.9	84.9	84.9	Lw	RTU1	720.00	240.00	240.00		1.00	g	523.87	752.83	4.50
S26	82.2	82.2	82.2	Lw	RTU4	720.00	240.00	240.00		1.00	g	533.11	748.84	4.50

Line Source Table

Name	Result. PWL			Result. PWL'			Lw / Li		Operating Time			Freq.	Moving Pt. Src			
	Day	Evening	Night	Day	Evening	Night	Type	Value	Day	Special	Night		Number			Speed
	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			(min)	(min)	(min)	(Hz)	Day	Evening	Night	(km/h)
Truck1	82.9	78.9	-24.1	64.0	60.0	-43.0	PWL-Pt	TrkMov	120.00	30.00	0.00		5.0	2.0	0.0	20.0
Truck2	78.0	73.2	-26.8	61.8	57.0	-43.0	PWL-Pt	TrkMov	120.00	30.00	0.00		3.0	1.0	0.0	20.0
Truck3	78.2	73.4	-26.6	61.8	57.0	-43.0	PWL-Pt	TrkMov	120.00	30.00	0.00		3.0	1.0	0.0	20.0

Result Table

Receiver		Limiting Value		rel. Axis			Lr w/o Noise Control		dL req.		Lr w/ Noise Control		Exceeding	
Name	ID	Day	Night	Station	Distance	Height	Day	Night	Day	Night	Day	Night	Day	Night
		dB(A)	dB(A)	m	m	m	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
R1	R1	50	45	58	75.55	5.50	43.3	40.2	-	-	0.0	0.0	-	-
R2	R2	50	45	58	136.67	5.50	40.9	37.9	-	-	0.0	0.0	-	-
R3	R3	50	45	58	86.15	5.50	44.5	41.5	-	-	0.0	0.0	-	-
R1a	R1a	50	45	58	70.21	-0.50	43.4	40.4	-	-	0.0	0.0	-	-
R2a	R2a	50	45	58	153.68	-0.50	33.3	30.3	-	-	0.0	0.0	-	-