

**TOWN OF CALEDON
PLANNING
RECEIVED**

March, 17, 2021

Environmental Noise And Vibration Study

**12035 Dixie Road
Caledon, Ontario**

SLR Project No: 241.30011.00000

March 2021



Environmental Noise and Vibration Study
12035 Dixie Road
Caledon, Ontario,
SLR Project No: 241.30011.00000

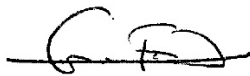
Submitted by:
SLR Consulting (Canada) Ltd.
150 Research Lane, Suite 105
Guelph, Ontario, N1G 4T2

Prepared for:
Tribal Partners Canada Inc.
201-2700 Steeles Avenue W
Vaughan, ON L4K 3C8

March 11, 2021

This document has been prepared by SLR Canada. The material and data in this report were prepared under the supervision and direction of the undersigned.

Prepared by:



Gustavo Elgueta B.Sc.
Acoustical Consultant

Reviewed by:



Aaron Haniff P.Eng.
Acoustics Specialist / Project Manager

TABLE OF CONTENTS

1.	Introduction.....	3
1.1	Nature of the Subject Lands	3
1.2	Nature of the Surroundings.....	3
2.	Assesment Framework	4
2.1	D-Series of Guidelines.....	4
2.1.1	Guideline D-6 Requirements.....	4
2.1.2	Requirements for Assessments	6
2.1.3	Requirements for Minimum Separation Distances	6
3.	Industry Classification.....	6
3.1	Minimum Separation Distance and Potential Area of Influence	6
4.	Applicable Guideline Limits	7
4.1	Industrial (Stationary) Sources	7
4.1.1	Guidelines.....	7
4.1.2	Application of the NPC-300 Guidelines	8
5.	Points of Reception	8
6.	Stationary Noise Impacts.....	9
6.1	Stationary Noise Sources	9
6.2	Stationary Noise Modelling	10
6.3	Noise Mitigation Measures.....	10
6.4	Stationary Noise Impacts.....	11
6.4.1	Receptor Sound Levels – Continuous Operations	11
6.4.2	Façade Sound Levels – Impulsive Operations.....	11
6.4.3	Façade Sound Levels – Emergency Generator Testing.....	12
7.	Vibration Assessment.....	12
8.	ConclUsions and Recommendations	12
9.	Statement Of Limitations.....	13
10.	References.....	13

TABLES

Table 1: Guideline D-6 - Potential Influence Areas and Recommended Minimum Setback Distances for Industrial Land Uses	5
Table 2: Guideline D-6 - Industrial Categorization Criteria	5
Table 3: NPC-300 Exclusion Limits for Non-Impulsive Sounds (L_{eq} (1-hr), dBA)	7
Table 4: NPC-300 Exclusion Limits for Impulsive Sounds (L_{LLM} , dBAI)	8
Table 5: Worst-Case Point of Reception Summary	9
Table 6: Overall Worst-case Industry Sound Levels – Continuous Operations.....	11
Table 7: Overall Worst-case Industry Sound Levels – Emergency Generator Testing.....	12

FIGURES

Figure 1:	Site Plan
Figure 2:	Context Plan
Figure 3:	Guideline D-6 Separation Distances
Figure 4:	Points of Reception
Figure 5:	Noise Source Locations – Buildings A and B
Figure 6:	Noise Barrier Locations
Figure 7:	Modelled Noise Impact Contours – Daytime – Continuous Operations
Figure 8:	Modelled Noise Impact Contours – Evening – Continuous Operations
Figure 9:	Modelled Noise Impact Contours – Night-time – Continuous Operations
Figure 10:	Modelled Noise Impact Contours – Daytime – Emergency Generator Testing

APPENDICES

Appendix A:	Development Drawings
Appendix B:	Noise Source Data

1. INTRODUCTION

SLR Consulting (Canada) Ltd. was retained by Tribal Partners Canada Inc. (Tribal) to conduct an environmental noise and vibration assessment for the proposed 12035 Dixie Road industrial/employment project in Caledon, Ontario.

The proposed development is to include four (4) separate buildings. The buildings are intended to be used for commercial operating including but not limited to distribution warehouse, dry storage, general commercial, etc.

The potential for stationary noise impacts from all four buildings on the surrounding residential noise-sensitive spaces was assessed in this report.

1.1 NATURE OF THE SUBJECT LANDS

The official address of the proposed development is 12035 Dixie Road in Caledon, Ontario and will be located on the south east corner off Dixie Road and Mayfield Road. The current lands are used for agricultural purposes. The majority of the existing surrounding noise sensitive receptors of interest correspond to one and two storey houses.

The proposed buildings involved with the development are to include the following:

- Building A, multi-storey (approximately 40 ft tall) building of 1,078,848 ft² with 98 truck loading bays;
- Building B, multi-storey (approximately 40 ft tall) building of 405,706 ft² with 63 truck loading bays;
- Building C, multi-storey (approximately 40 ft tall) building of 189,827 ft² with 34 truck loading bays; and
- Building D, multi-storey (approximately 40 ft tall) building of 231,198 ft² with 36 truck loading bays.

A copy of the development drawings is included in **Appendix A**. A site plan is included in **Figure 1**.

1.2 NATURE OF THE SURROUNDINGS

The lands surrounding the development are dominated by agricultural lands, industrial lands, commercial spaces and golf courses. One and two storey single family homes are located around the proposed site on Dixie Road and Mayfield Road. Additionally, a residential development is currently being developed to the east +-of the proposed development, on Mayfield Road. These residences correspond to the nearest noise sensitive receptors to the development.

The lands to the west of the development (on the other side of Dixie Road) contain both an existing warehouse operation (Acklands Grainger) and the currently constructed UPS warehouse.

Highway 410 is located approximately 800 m west of the development. The surrounding topography is mainly flat with no significant variations.

A context plan is shown in **Figure 2**.

2. ASSESSMENT FRAMEWORK

The intent of this report is to identify any existing and potential land use compatibility issues and to identify and evaluate options to achieve appropriate design, buffering and/or separation distances between the proposed industrial land uses, including residential uses, and nearby industrial areas and/or major facilities. Recommended measures intended to eliminate or mitigate negative impacts and adverse effects are provided.

The requirements of Ontario's planning regime are organized such that generic policy is informed by specific policy, guidance, and legislation, as follows:

- MECP D-series of guidelines set out methods to determine if assessments are required (areas of influence, recommended separation distances, and the need for additional studies); then
- MECP and Municipal regulations, policies, standards and guidelines then set out the requirements of additional air quality, noise and vibration studies and the applicable policies, standards, guidelines and objectives to ensure that adverse effects do not occur.

2.1 D-SERIES OF GUIDELINES

The D-series of guidelines were developed by the MECP in 1995 as a means to assess recommended separation distances and other control measures for land use planning proposals in an effort to prevent or minimize 'adverse effects' from the encroachment of incompatible land uses where a facility either exists or is proposed. D-series guidelines address sources including sewage treatment (Guideline D-2), gas and oil pipelines (Guideline D-3), landfills (Guideline D-4), water services (Guideline D-5) and industries (Guideline D-6).

For this project, the applicable guideline is Guidelines D-6 - *Compatibility between Industrial Facilities and Sensitive Land Uses*. Guideline D-6 specifically addresses issues of air quality, odour, dust, noise and litter from industrial facilities.

Adverse effect is a term defined in the Environmental Protection Act and "means one or more of

- impairment of the quality of the natural environment for any use that can be made of it,
- injury or damage to property or to plant or animal life,
- harm or material discomfort to any person,
- an adverse effect on the health of any person,
- impairment of the safety of any person,
- rendering any property or plant or animal life unfit for human use,
- loss of enjoyment of normal use of property, and
- interference with the normal conduct of business".

2.1.1 GUIDELINE D-6 REQUIREMENTS

To minimize the potential to cause an adverse effect from industrial operations, areas of influence and recommended minimum setback distances are included within Guideline D-6. The areas of influence and recommended separation distances from the guideline are provided in the table below.

Table 1: Guideline D-6 - Potential Influence Areas and Recommended Minimum Setback Distances for Industrial Land Uses

Industry Classification	Area of Influence	Recommended Minimum Setback Distance
Class I – Light Industrial	70 m	20 m
Class II – Medium Industrial	300 m	70 m
Class III – Heavy Industrial	1000 m	300 m

Industrial categorization criteria are supplied in Guideline D-6-2, and are shown in the following table:

Table 2: Guideline D-6 - Industrial Categorization Criteria

Category	Outputs	Scale	Process	Operations / Intensity	Possible Examples
Class I Light Industry	<ul style="list-style-type: none"> Noise: Sound not audible off-property Dust: Infrequent and not intense Odour: Infrequent and not intense Vibration: No ground-borne vibration on plant property 	<ul style="list-style-type: none"> No outside storage Small-scale plant or scale is irrelevant in relation to all other criteria for this Class 	<ul style="list-style-type: none"> Self-contained plant or building which produces/stores a packaged product Low probability of fugitive emissions 	<ul style="list-style-type: none"> Daytime operations only Infrequent movement of products and/or heavy trucks 	<ul style="list-style-type: none"> Electronics manufacturing and repair Furniture repair and refinishing Beverage bottling Auto parts supply Packaging and crafting services Distribution of dairy products Laundry and linen supply
Class II Medium Industry	<ul style="list-style-type: none"> Noise: Sound occasionally heard off-property Dust: Frequent and occasionally intense Odour: Frequent and occasionally intense Vibration: Possible ground-borne vibration, but cannot be perceived off-property 	<ul style="list-style-type: none"> Outside storage permitted Medium level of production allowed 	<ul style="list-style-type: none"> Open process Periodic outputs of minor annoyance Low probability of fugitive emissions 	<ul style="list-style-type: none"> Shift operations permitted Frequent movements of products and/or heavy trucks with the majority of movements during daytime hours 	<ul style="list-style-type: none"> Magazine printing Paint spray booths Metal command Electrical production Manufacturing of dairy products Dry cleaning services Feed packing plants
Class III Heavy Industry	<ul style="list-style-type: none"> Noise: Sound frequently audible off property Dust: Persistent and/or intense Odour: Persistent and/or intense Vibration: Ground-borne vibration can frequently be perceived off-property 	<ul style="list-style-type: none"> Outside storage of raw and finished products Large production levels 	<ul style="list-style-type: none"> Open process Frequent outputs of major annoyances High probability of fugitive emissions 	<ul style="list-style-type: none"> Continuous movement of products and employees Daily shift operations permitted 	<ul style="list-style-type: none"> Paint and varnish manufacturing Organic chemical manufacturing Breweries Solvent recovery plants Soaps and detergent manufacturing Metal refining and manufacturing

2.1.2 REQUIREMENTS FOR ASSESSMENTS

The D-Series of Guidelines require that studies be conducted to assess impacts where sensitive land uses are proposed within the potential area of influence of a facility. This report is intended to fulfill this requirement.

The D-series guidelines reference previous versions of the noise guidelines (Publications NPC-205 and LU-131). However, the D-Series of guidelines are still in force, still represent current MECP policy and are specifically referenced in numerous other current MECP policies. In applying the D-series guidelines, the current policies, regulations, standards and guidelines have been used (e.g., Publication NPC-300).

2.1.3 REQUIREMENTS FOR MINIMUM SEPARATION DISTANCES

Guideline D-6 also *recommends* that no sensitive land use be placed within the Recommended Minimum Separation Distance. However, it should be noted that this is a recommendation only. Section 4.10 of the Guideline allows for development within the separation distance, in cases of redevelopment, infilling, and transitions to mixed use, provided that the appropriate studies are conducted and that the relevant noise guidelines are met.

3. INDUSTRY CLASSIFICATION

Based on the proposed facility description the potential for noise impacts on the surrounding sensitive land uses exists. Potential sources of noise impacts include roof top cooling units and truck traffic inside the proposed development. According to the D-6 Guidelines, Buildings A, B, C and D would be classified as Class II facilities.

3.1 MINIMUM SEPARATION DISTANCE AND POTENTIAL AREA OF INFLUENCE

Based on the D-6 Guidelines, the following distances are recommended for noise sources Buildings A to D, 70 m recommended minimum separation and potential area of influence up to 300 m.

These recommended separation distances are shown in **Figure 3**.

The proposed industrial development is surrounded by existing noise sensitive land uses. As a result, a detailed noise study was completed for the proposed development.

The local area surrounding the project (north of Mayfield Road) is transitioning towards industrial/commercial uses. The existing noise sensitive land uses along Dixie Road may change to become industrial commercial in the near future. This study should be updated, if any of the surrounding land uses are converted to be non-noise sensitive.

4. APPLICABLE GUIDELINE LIMITS

4.1 INDUSTRIAL (STATIONARY) SOURCES

4.1.1 GUIDELINES

4.1.1.1 MECP Publication NPC-300 Guidelines for Stationary Noise

The applicable MECP noise guidelines for new sensitive land uses adjacent to existing industrial commercial uses are provided in MECP Publication NPC-300. NPC-300 revokes and replaces the previous noise assessment guideline, Publication LU-131 and Publication NPC-205, which was previously used for assessing noise impacts as part of Certificates of Approval / Environmental Compliance Approvals granted by the MECP for industries.

The new guideline sets out noise limits for two main types of noise sources:

- Non-impulsive, “continuous” noise sources such as ventilation fans, mechanical equipment, and vehicles while moving within the property boundary of an industry. Continuous noise is measured using 1-hour average sound exposures (L_{eq} (1-hr) values), in dBA; and
- Impulsive noise, which is a “banging” type noise characterized by rapid rise time and decay. Impulsive noise is measured using a logarithmic mean (average) level (L_{LM}) of the impulses in a one-hour period, in dBA.

Furthermore, the guideline requires an assessment at, and provides separate guideline limits for:

- Outdoor points of reception (e.g., back yards, communal outdoor amenity areas); and
- Façade points of reception such as the plane of windows on the outdoor façade which connect onto noise sensitive spaces, such as living rooms, dens, eat-in kitchens, dining rooms and bedrooms.

The applicable noise limits at a point of reception are the higher of:

- The existing ambient sound level due to road traffic, or
- The exclusion limits set out in the guideline.

The following tables set out the exclusion limits from the guideline.

Table 3: NPC-300 Exclusion Limits for Non-Impulsive Sounds (L_{eq} (1-hr), dBA)

Time of Day	Class 1 Area	
	Plane of Windows of Noise Sensitive Spaces	Outdoor Points of Reception
7 am to 7 pm	50	50
7 pm to 11 pm	50	50
11 pm to 7 am	45	n/a

Table 4: NPC-300 Exclusion Limits for Impulsive Sounds (L_{LLM}, dBAI)

Time of Day	No. of Impulses in a 1-hour Period	Class 1 Area	
		Plane of Windows of Noise Sensitive Spaces	Outdoor Points of Reception
7 am to 11 pm	9 or more	50	50
	7 to 8	55	55
	5 to 6	60	60
	4	65	65
	3	70	70
	2	75	75
	1	80	80
11 pm to 7 am	9 or more	45	n/a
	7 to 8	50	n/a
	5 to 6	55	n/a
	4	60	n/a
	3	65	n/a
	2	70	n/a
	1	75	n/a

Notes:

n/a Not Applicable. Outdoor points of reception are not considered to be noise sensitive during the overnight period.

The applicable guideline limits for infrequent events such as emergency generator set testing are +5 dB higher than the values above.

4.1.2 APPLICATION OF THE NPC-300 GUIDELINES

The stationary noise guidelines apply only to residential land uses and to noise-sensitive commercial and institutional uses, as defined in NPC-300 (e.g., schools, daycares, hotels). For the Project, the stationary noise guidelines only apply to the residential portions of the development, including:

- Individual residences; and
- Communal outdoor amenity areas.

All of the above have been considered as noise-sensitive points of reception in the analysis.

The acoustic environment surrounding the proposed development is considered a Class 1 area, as roadway noise is expected to be audible during all periods of the day.

5. POINTS OF RECEPTION

Noise-sensitive receptors with the potential to be impacted by the proposed development are the residential residences located along Dixie Road and Mayfield Road.

Modelled receptor locations include windows along all building façades. Unless otherwise noted, the upper floor window locations are considered the “worst-case” for noise impacts. As a conservative assessment of noise impacts, all windows were assumed to be located in a noise-sensitive space (i.e. a living/dining room or bedroom).

Table 5 summarizes the points of reception (PORs) included in this assessment. The context plan in **Figure 4** also shows the location of each POR with respect to the development.

Table 5: Worst-Case Point of Reception Summary

Receptor ID	Description
POR 1	Two storey home located on Old School Road, W of the development
POR 2	Two storey home located on Old School Road, W of the development
POR 3	Two storey home located on Old School Road, W of the development
POR 4	Two storey home located on the corner of Old School Road and Mayfield, South of the development
POR 5	Two storey home located on Mayfield Road, South of the development
POR 6	Current development located on Mayfield Road, East of the development

The local area surrounding the project (north of Mayfield Road) is transitioning towards industrial/commercial uses. The surrounding existing noise sensitive land uses along Dixie Road may change to become industrial commercial in the near future. This study should be updated, if any of the surrounding land uses are converted to be non-noise sensitive.

6. STATIONARY NOISE IMPACTS

6.1 STATIONARY NOISE SOURCES

Noise sources associated to daily operations in the proposed buildings are included below. It has been assumed that Buildings A through D will correspond to dry storage facilities .

- Building A:
 - Fifteen (15) rooftop HVAC units;
 - Thirty (30), eight (8) and sixteen (16) idling trucks at loading bays during the daytime, evening and nighttime hour period, respectively;
 - Thirty (30), eight (8) and sixteen (16) moving trucks at 15 km/hour during the daytime, evening and night-time hour periods, respectively; and
 - One (1) emergency generator testing for 60 minutes.
- Building B:
 - Six (6) rooftop HVAC units;
 - Twenty (20), six (6) and ten (10) idling trucks at loading bays during the daytime, evening and nighttime hour period, respectively;
 - Twenty (20), six (6) and ten (10) moving trucks at 15 km/hour during the daytime, evening and night-time hour periods, respectively; and
 - One (1) emergency generator testing for 60 minutes.

- Building C:
 - Three (3) rooftop HVAC units;
 - Ten (10), three (3), and five (5) idling trucks and reefers at loading bays during the daytime, evening and nighttime hour periods, respectively;
 - Ten (10), three (3), and five (5) moving trucks at 15 km/hour during the daytime, evening and night-time hour periods, respectively; and
 - One (1) emergency generator testing for 60 minutes.
- Building D:
 - Three (3) rooftop HVAC units;
 - Eleven (11), three (3), and six (6) idling trucks and reefers at loading bays during the daytime, evening and nighttime hour periods, respectively;
 - Eleven (11), three (3), and six (6) moving trucks at 15 km/hour during the daytime, evening and night-time hour periods, respectively; and
 - One (1) emergency generator testing for 60 minutes.

Generator testing was assumed to be performed during daytime hours only. Locations of the modelled stationary sources are shown in **Figure 5**. A summary of the sound power levels, modelling adjustments and operating conditions used in the analysis are included in **Appendix B**. Sound emission data used in the assessment were based on generic data from SLR's in-house database or manufacturer's specifications wherever possible.

6.2 STATIONARY NOISE MODELLING

Stationary source impact modelling was completed using Cadna/A, a prediction software consistent with the ISO 9613-2 standard. The model took into consideration the layout of a site, the effect of development buildings, the location of the sources, any applicable surrounding buildings/structures, and ground topography.

One (1) order of reflection was included in the noise modelling to account effects from the development buildings. As described in ISO 9613-2, ground factor values that represent the effect of ground absorption on sound levels range between 0 and 1. A ground factor value of 0.2 was applied in the modelling within the proposed development (reflective for pavement) and a ground factor of 1 was applied on the surroundings (mostly absorptive for tree and grassy lands).

6.3 NOISE MITIGATION MEASURES

Presently (assessing the current conditions with residential homes to the west of the project), physical noise mitigation measures are required for the project to demonstrate compliance with the applicable limits. Should some or all of the residential homes / uses along Dixie Road be demolished or changed in the future, an updated report may conclude there is reduction or no need for mitigation.

At the time of this report, an acoustic berm/barrier is required within the proposed development to demonstrate compliance. Location and dimension of the acoustic berm/barrier is specified in **Figure 6**. The berm/barrier should be selected so that it has sufficient mass to adequately attenuate the noise (generally a minimum of 20 kg/m² face density is required). The berm/barrier should be free of gaps and cracks on the sides and bottom. The system should also be designed to withstand any wind loading.

Emergency generator exhausts were assumed to be fitted with Industrial Grade silencers.

6.4 STATIONARY NOISE IMPACTS

6.4.1 RECEPTOR SOUND LEVELS – CONTINUOUS OPERATIONS

Impacts from project generated noise (including the barrier listed in **Section 6.3**) was predicted at the worst-case locations for each of the surrounding residential homes, as outlined in **Section 5** – Points of Reception for daily operations. The predicted worst-case sound level contours are shown in **Figures 7, 8 and 9** for the daytime, evening and nighttime periods, respectively. Summarized in **Table 6** are the noise impacts for each POR.

Table 6: Overall Worst-case Industry Sound Levels – Continuous Operations (Mitigated)

Receptor ID	Time of Day	Predicted Industry Level		Guideline Limit ^[1]		Meets Guideline?
		Façade	Outdoor	Façade	Outdoor	
POR 1	Day	48	47	50	50	Yes
	Evening	46	44	50	50	Yes
	Nighttime	45	-	45	n/a	Yes
POR 2	Day	48	44	50	50	Yes
	Evening	46	41	50	50	Yes
	Nighttime	45	-	45	n/a	Yes
POR 3	Day	48	48	50	50	Yes
	Evening	45	44	50	50	Yes
	Nighttime	45	-	45	n/a	Yes
POR 4	Day	47	46	50	50	Yes
	Evening	44	43	50	50	Yes
	Nighttime	44	-	45	n/a	Yes
POR 5	Day	47	45	50	50	Yes
	Evening	43	42	50	50	Yes
	Nighttime	44	-	45	n/a	Yes
POR 6	Day	46	45	50	50	Yes
	Evening	43	42	50	50	Yes
	Nighttime	44	-	45	n/a	Yes

Notes: Sound levels are Leq (1-hr) sound levels, in dBA.

Based on the above results, the NPC-300 guideline limits are predicted to be met during all periods of the day at all sensitive PORs.

6.4.2 FAÇADE SOUND LEVELS – IMPULSIVE OPERATIONS

The only anticipated source of impulsive noise is from the operation of forklifts while they move material from the warehouse to the trailers. The operations of the forklifts can cause impacts as they travel over the joint between the warehouse and the trailer. Impulsive noise sources as forklift load and unloading trucks were predicted and are not expected to be a significant source of sound at the surrounding receptors.

6.4.3 FAÇADE SOUND LEVELS – EMERGENCY GENERATOR TESTING

Impacts from noise were predicted at the worst-case locations for each of the surrounding residential homes, as outlined in **Section 3** – Points of Reception for emergency generator testing operations, assuming simultaneous testing of all units. The predicted worst-case sound level contours are shown in **Figure 10** for the daytime period. Summarized in **Table 7** are the noise impacts for each POR.

Table 7: Overall Worst-case Industry Sound Levels – Emergency Generator Testing

Receptor ID	Time of Day	Predicted Industry Level		Guideline Limit ^[1]		Meets Guideline?
		Façade	Outdoor	Façade	Outdoor	
POR 1	Day	38	41	55	55	Yes
POR 2	Day	41	40	55	55	Yes
POR 3	Day	47	45	55	55	Yes
POR 4	Day	50	50	55	55	Yes
POR 5	Day	38	38	55	55	Yes
POR 6	Day	34	34	55	55	Yes

Noise levels are predicted to be below the 55 dBA limit required for emergency equipment testing at all surrounding noise sensitive PORs.

7. VIBRATION ASSESSMENT

The proposed development is not anticipated to contain any significant industrial vibration sources, such as large stamping presses or forges. Under applicable MECP guidelines, a detailed vibration assessment is not required. Adverse impacts from industrial vibration from the proposed warehouse operations is not anticipated.

8. CONCLUSIONS AND RECOMMENDATIONS

A compatibility assessment has been completed, examining the potential for noise and vibration impacts from the proposed development project and the effect on its surroundings. Based on the results of our studies:

- Adverse noise impacts from the proposed development (stationary sources) are not anticipated at the proposed industrial development, with the inclusion of a single noise barrier described in **Section 6.3**. The requirements of MECP Guideline D-6 are met.
- Adverse vibration impacts from the proposed development (stationary sources) are not anticipated at the proposed residential development. The requirements of MECP Guideline D-6 are met.

The potential for noise impacts from the proposed development's stationary sources have been assessed. Based on the above, the MECP NPC-300 guideline limits are met based on the design of the development.

9. STATEMENT OF LIMITATIONS

This report has been prepared and the work referred to in this report has been undertaken by SLR Consulting (Canada) Ltd. (SLR) for Tribal Partners Canada Inc., hereafter referred to as the “Client”. It is intended for the sole and exclusive use of the Client. The report has been prepared in accordance with the Scope of Work and agreement between SLR and the Client. Other than by the Client and as set out herein, copying or distribution of this report or use of or reliance on the information contained herein, in whole or in part, is not permitted unless payment for the work has been made in full and express written permission has been obtained from SLR.

This report has been prepared in a manner generally accepted by professional consulting principles and practices for the same locality and under similar conditions. No other representations or warranties, expressed or implied, are made.

Opinions and recommendations contained in this report are based on conditions that existed at the time the services were performed and are intended only for the client, purposes, locations, time frames and project parameters as outlined in the Scope of Work and agreement between SLR and the Client. The data reported, findings, observations and conclusions expressed are limited by the Scope of Work. SLR is not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. SLR does not warranty the accuracy of information provided by third party sources.

10. REFERENCES

International Organization for Standardization, ISO 9613-2: *Acoustics – Attenuation of Sound During Propagation Outdoors Part 2: General Method of Calculations*, Geneva, Switzerland, 1996.

Ontario Ministry of the Environment, Conservation and Parks (MECP), *Publication NPC-300: Environmental Noise Guideline, Stationary and Transportation Sources – Approval and Planning*.

Ontario Ministry of the Environment, Conservation & Parks (MECP, 1995), Guideline D-6: Compatibility Between Industrial Facilities and Sensitive Land Uses.

Ontario Ministry of the Environment, Conservation & Parks (MECP), 1989, ORNAMENT Ontario Road Noise Analysis Method for Environment and Transportation – Technical Document.

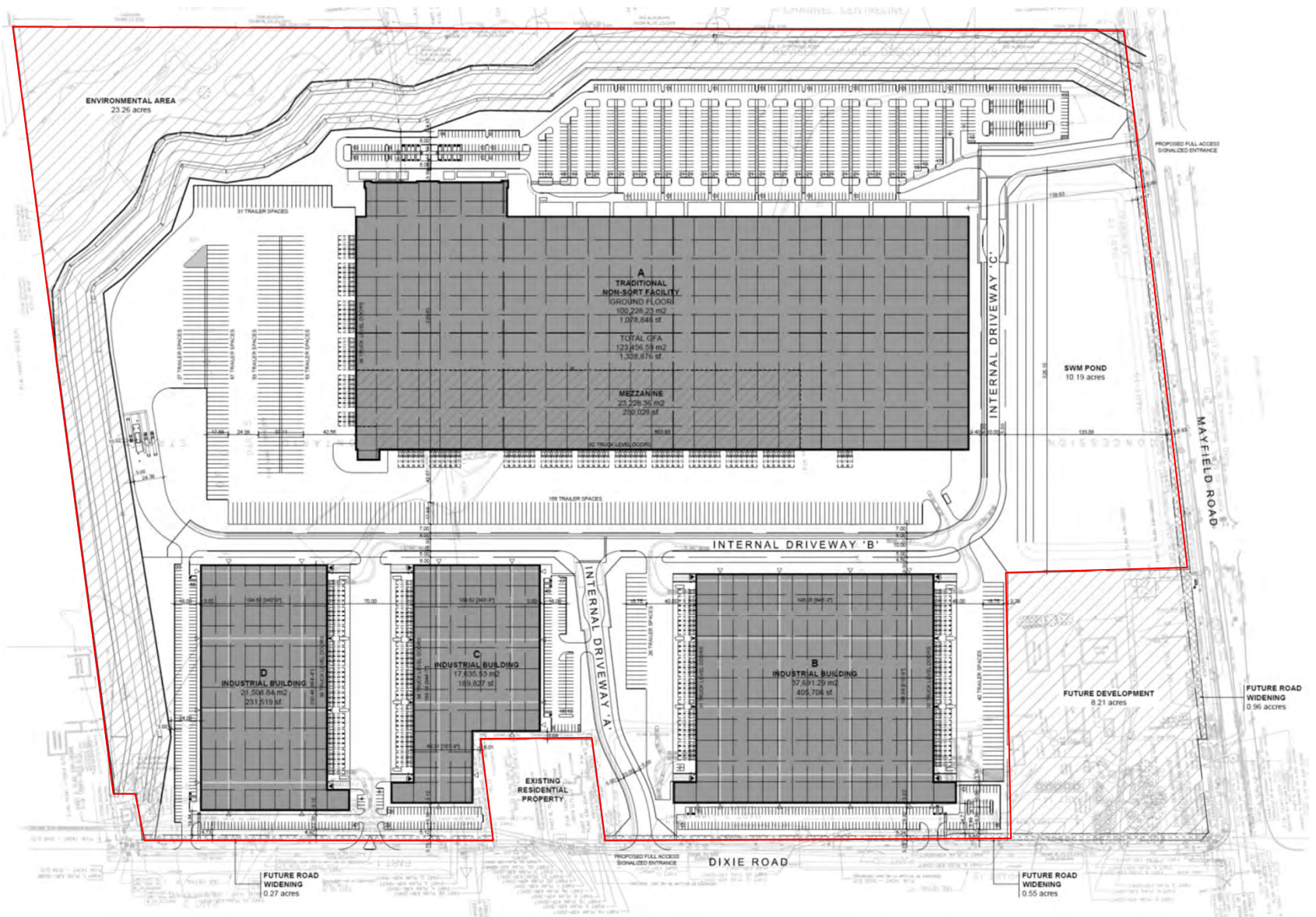
Ontario Ministry of the Environment, Conservation and Parks, 1996, STAMSON v5.04: Road, Rail and Rapid Transit Noise Prediction Model

This page intentionally left blank
for 2-sided printing purposes





Figures

This page intentionally left blank
for 2-sided printing purposes



- Property Line
- Building Outline

TRIBAL PARTNERS CANADA LTD.		True North 	Scale: NTS		METRES	 SLR global environmental solutions
12035 DIXIE ROAD			Date: Mar 11, 2021	Rev 0.0	Figure No. 1	
SITE PLAN			Project No. 241.30011.00000			



TRIBAL PARTNERS CANADA LTD.

12035 DIXIE ROAD

CONTEXT PLAN

True North



Scale:

1:20,000

METRES

Date: Mar 11, 2021

Rev 0.0

Figure No.

Project No. 241.30011.00000

2





TRIBAL PARTNERS CANADA LTD.

12035 DIXIE ROAD

GUIDELINE D-6 SEPARATION DISTANCES

True North



Scale:

1:20,000

METRES

Date: Mar 11, 2021

Rev 0.0



Project No. 241.30011.00000

Figure No.

3





TRIBAL PARTNERS CANADA LTD.			Scale: 1:7,000		METRES	
12035 DIXIE ROAD			Date: Mar 11, 2021	Rev 0.0	Figure No. 4	
POINTS OF RECEPTION			Project No. 241.30011.00000			



Building D

- Rooftop HVAC (x3)
- Idling Trucks at Loading Bays (Day: 11 trucks; Evening: 3 Trucks; Night: 6 Trucks)
- Moving Trucks (Day: 11 trucks; Evening: 3 Trucks; Night: 6 Trucks)
- Emergency Generator (x1)

Building A

- Rooftop HVAC (x15)
- Idling Trucks at Loading Bays (Day: 30 trucks; Evening: 8 Trucks; Night: 16 Trucks)
- Moving Trucks (Day: 30 trucks; Evening: 8 Trucks; Night: 16 Trucks)
- Emergency Generator (x1)

Building C

- Rooftop HVAC (x3)
- Idling Trucks at Loading Bays (Day: 10 trucks; Evening: 3 Trucks; Night: 5 Trucks)
- Moving Trucks (Day: 10 trucks; Evening: 3 Trucks; Night: 5 Trucks)
- Emergency Generator (x1)

Building B

- Rooftop HVAC (x6)
- Idling Trucks at Loading Bays (Day: 20 trucks; Evening: 6 Trucks; Night: 10 Trucks)
- Moving Trucks (Day: 20 trucks; Evening: 6 Trucks; Night: 10 Trucks)
- Emergency Generator (x1)



TRIBAL PARTNERS CANADA LTD.

12035 DIXIE ROAD

NOISE SOURCE LOCATIONS

True North



Scale: 1:4,500

METRES

Date: Mar 11, 2021

Rev 0.0

Project No. 241.30011.00000

Figure No.

5





TRIBAL PARTNERS CANADA LTD.

12035 DIXIE ROAD

NOISE BARRIER LOCATION

True North



Scale: 1:7,000

Date: Mar 11, 2021

Rev 0.0

Project No. 241.30011.00000

METRES

Figure No.

6





Contour Legend

	> 40 dBA
	> 45 dBA
	> 50 dBA
	> 55 dBA
	> 60 dBA
	> 65 dBA
	> 70 dBA
	> 75 dBA
	> 80 dBA

Contour Ht = 4.5 m

	Property Line
	Building Outline

TRIBAL PARTNERS CANADA LTD.

12035 DIXIE ROAD

MODELLED NOISE IMPACT CONTOURS
DAYTIME – CONTINUOUS OPERATION

True North



Scale: 1:10,000

Date: Mar 11, 2021

Rev 0.0

Project No. 241.30011.00000

METRES

Figure No.

7





TRIBAL PARTNERS CANADA LTD.

12035 DIXIE ROAD

MODELLED NOISE IMPACT CONTOURS
EVENING – CONTINUOUS OPERATION

True North



Scale: 1:10,000

Date: Mar 11, 2021

Rev 0.0

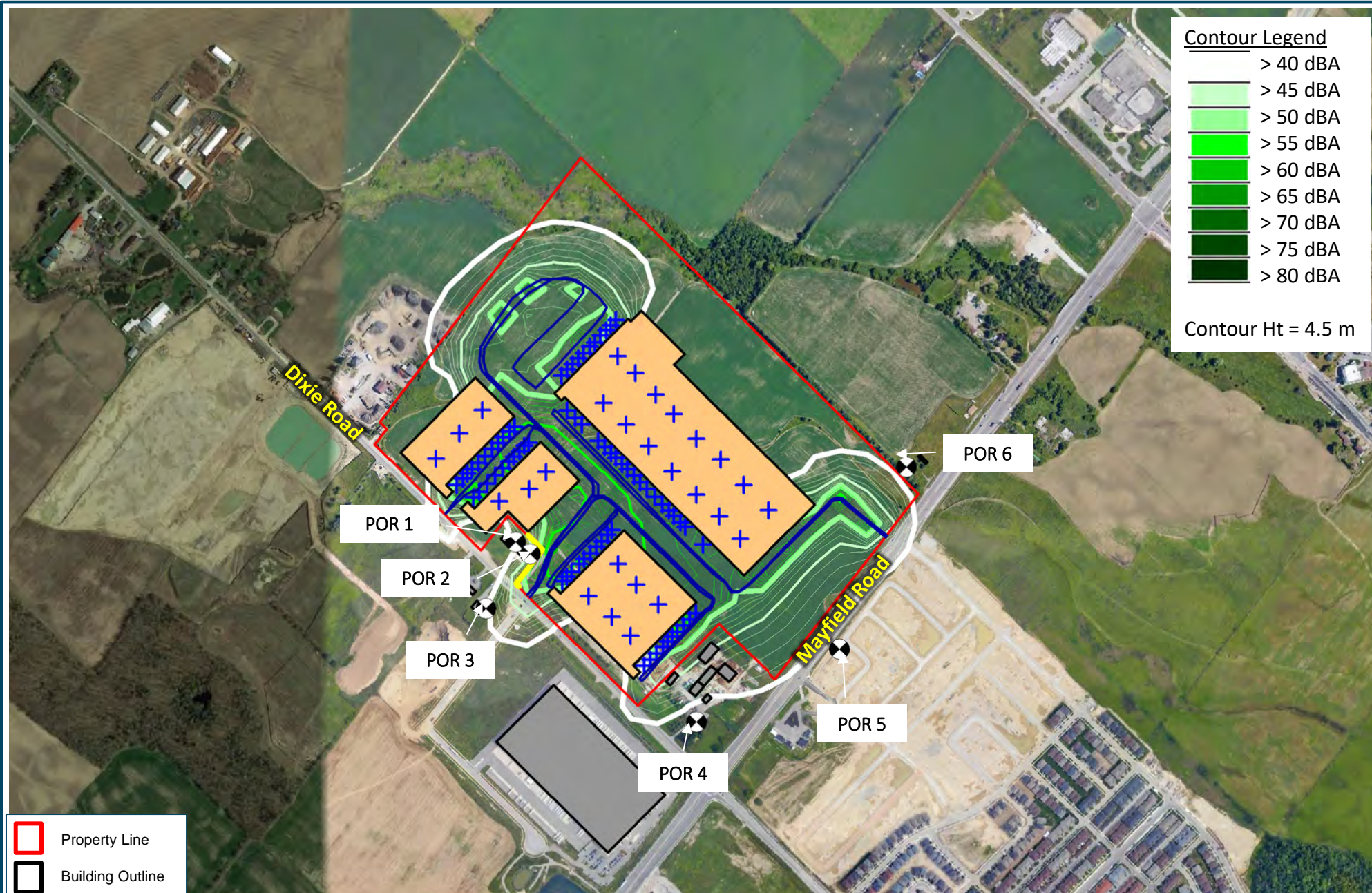
Project No. 241.30011.00000

METRES

Figure No.

8





TRIBAL PARTNERS CANADA LTD.

12035 DIXIE ROAD

MODELLED NOISE IMPACT CONTOURS
NIGHTTIME – CONTINUOUS OPERATION

True North



Scale:

1:10,000

METRES

Date: Mar 11, 2021

Rev 0.0

Figure No.

Project No. 241.30011.00000

9





TRIBAL PARTNERS CANADA LTD.

12035 DIXIE ROAD

MODELLED NOISE IMPACT CONTOURS
DAYTIME – EMERGENCY GENERATION TESTING

True North



Scale:

1:10,000

METRES

Date: Mar 11, 2021

Rev 0.0

Figure No.

10

Project No. 241.30011.00000





Appendix A

This page intentionally left blank
for 2-sided printing purposes



P-20146	A-1.0
---------	-------

This page intentionally left blank
for 2-sided printing purposes



Appendix B

This page intentionally left blank
for 2-sided printing purposes

Table B.1: Summary of Noise Source Sound Power Levels

Source Description	Maximum Sound Power Levels (1/1 Octave Band Levels)									Total PWL (dBA)	Notes
	32 (dB)	63 (dB)	125 (dB)	250 (dB)	500 (dB)	1000 (dB)	2000 (dB)	4000 (dB)	8000 (dB)		
Buildings A - D											
20 ton HVAC	89	92	96	93	92	90	86	82	76	95	- based on SLR historical data - no duty cycling applied during daytime/evening - 30 min duty cycling applied during night-time period
Idling Trucks on Loading Bays	-	93	88	83	90	87	88	82	71	93	- based on SLR historical data - Trucks idling for 5 min. - For each buidling 30% of loading bays occupied during daytime, 7% during evening and 15% during nighttime
Moving Trucks	98	101	101	97	96	96	92	84	78	100	- based on SLR historical data - Building A worst case traffic during 60 minute period: 30 trucks day, 8 trucks evening, 16 trucks nighttime - Building B worst case traffic during 60 minute period: 20 trucks day, 6 trucks evening, 10 trucks nighttime - Building C worst case traffic during 60 minute period: 10 trucks day, 3 trucks evening, 5 trucks nighttime - Building D worst case traffic during 60 minute period: 11 trucks day, 3 trucks evening, 6 trucks nighttime - Trucks moving at a maximum speed of 15 km/h
Emergency Generator Exhaust	-	109	96	86	86	89	100	100	101	106	- based on SLR historical data for 150kW Generator - Fitted with industrial grade silencer