Compatibility Mitigation Study, Air Quality and Environmental Noise

8075 Highway 7 – Guelph Eramosa

Eramosa Farms Ltd.

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SLR Project No.: 241.031181.00001

May 14, 2024

Revision: 0

Revision Record

Revision	Date	Prepared By	Checked By	Authorized By
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Executive Summary

SLR Consulting (Canada) Ltd. (SLR), was retained by Eramosa Farms Ltd., to conduct a Compatibility / Mitigation Study focusing on air quality, odour, dust, and noise in support of a Zoning By-law Amendment (ZBA) application with Wellington County and Township of Guelph Eramosa for the proposed development. The development site is located at 8075 Highway 7 in Guelph Eramosa, Ontario ("the Project site").

This assessment has considered:

- Air quality, odour, and dust emissions; and
- Environmental noise.

SLR has reviewed the surrounding land uses in the area with respect to the following guidelines:

- The Provincial Policy Statement;
- The Provincial Growth Plan;
- Ministry of the Environment, Conservation and Parks ("MECP") Guidelines D-1 and D-6;
- Ontario Regulation 419/05: *Air Pollution – Local Air Quality* and its associated air quality standards and assessment requirements;
- The MECP draft policies on odour impacts and assessment; and
- MECP Publication NPC-300 noise guidelines for industrial and transportation.

There is potential for fugitive dust emissions from the trucks moving on unpaved roads within the Project site. Therefore, it is recommended that vehicles speeds on site be limited to less than 20 km/hour and that emissions of dust from the unpaved roads be controlled through the use of dust best management practices such as the application of water.

With the use of dust best management practices on the unpaved Project site roads, adverse air quality impacts from the Project site sources will be controlled and the Project site is anticipated to be compatible with the surrounding land uses from an air quality perspective.

The potential for noise impacts from the proposed Project based stationary sources have been assessed. With the mitigation measures outlined in **Section 6.1.7**, the requirements of MECP Guideline D-6 and the applicable MECP Publication NPC-300 guideline limits are predicted to be met at the surrounding noise-sensitive receptors. Therefore, the Project site is anticipated to be compatible with the surrounding land uses from a noise perspective.

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1.0 Introduction

SLR Consulting (Canada) Ltd. (SLR), was retained by Eramosa Farms Ltd., to conduct a Compatibility / Mitigation Study focusing on air quality, odour, dust, and noise in support of a Zoning By-law Amendment (ZBA) application with Wellington County and Township of Guelph Eramosa for the proposed development. The development site is located at 8075 Highway 7 in Guelph Eramosa, Ontario ("the Project site").

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- The MECP draft policies on odour impacts and assessment; and
- MECP Publication NPC-300 noise guidelines for industrial and transportation.

This report identifies existing and potential land use compatibility issues and identifies and evaluates options to achieve appropriate design, buffering and/or separation distances between the proposed industry and the nearby sensitive land uses.

2.0 Description of Development and Surroundings

2.1 Proposed Development

The proposed Project site is at 8075 Highway 7 in Guelph Eramosa. The site is currently occupied by agricultural land uses.

The proposed Project site consists of a Transport Establishment which will have approximately 1,170 spaces for truck trailers. A key plan is provided for reference in **Appendix A**.

A site and context plan are provided in **Figure 1**.

2.2 Surroundings

The Project site is bounded by Highway 7 to the northwest and Wellington County Road 29 to the northeast. The Project site is primarily surrounded by residential and agricultural uses. Land Use Designations in the Area

2.2.1 County of Wellington Official Plan

The County of Wellington Official Plan Map for the area can be seen in **Figure 2**. The Project site is designated as Rural Employment Areas.

The lands to the south and south west are also designated as Rural Employment Area. The lands north, northwest, and east of the Project are designated as Prime Agricultural.

2.2.2 Township of Eramosa Zoning By-Law 40/2016

The Township of Guelph Eramosa Zoning Map for the area can be seen in **Figure 3**. The Project site is currently zoned as Agricultural ("A"). The lands to the north, northwest, and east are also zoned A. The lands to the south and southwest are zoned as Environmental Protection ("EP"). Beyond the immediate surroundings the majority of the lands in the area are zoned as A. A manufacturing facility was recently approved by the Township and the Ontario Land Tribunal for the lands to the east of the Project site on the other side of the municipal Drain. These lands are no longer zoned A.

3.0 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 surrounding sensitive land uses, including residential uses, and nearby Employment Areas and/or major facilities. Recommended measures intended to eliminate or mitigate negative impacts and adverse effects are provided.

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

- The Ontario Planning Act, Section 2.1 – sets the ground rules for land use planning in Ontario, whereby planning decisions have regard to matters of provincial interest including orderly development, public health, and safety; then
- The Provincial Policy Statement ("PPS") sets out goals – making sure adjacent land uses are compatible from a health and safety perspective and are appropriately buffered; then
- The Provincial Growth Plan, Section 2.2.5 – builds on the PPS to establish a unique land use planning framework for the Greater Golden Horseshoe, where the development of sensitive land uses will avoid, or where avoidance is not possible, minimize and mitigate adverse impacts on industrial, manufacturing, or other uses that are particularly vulnerable to encroachment; then
- The MECP D-series of guidelines set out methods to determine if assessments are required (Areas of Influence, Recommended Minimum 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 studies and the applicable policies, standards, guidelines, and objectives to ensure that adverse effects do not occur.

3.1 Ontario Planning Act

The Ontario Planning Act is provincial legislation that sets out the ground rules for land use planning in Ontario. It describes how land uses may be controlled, and who may control them. "The purpose of the Act is to:

- provide for planning processes that are fair by making them open, accessible, timely and efficient;
- promote sustainable economic development in a healthy natural environment within a provincial policy framework;
- provide for a land use planning system led by provincial policy;
- integrate matters of provincial interest into provincial and municipal planning decisions by requiring that all decisions be consistent with the Provincial Policy Statement and conform/not conflict with provincial plans;
- encourage co-operation and coordination among various interests;
- recognize the decision-making authority and accountability of municipal councils in planning"[1]

Section 2.1 of the Ontario Planning Act describes how approval authorities and Tribunals must have regard to matters of provincial interest including orderly development, public health, and safety.

3.2 Provincial Policy Statement

The PPS "provides policy direction on matters of provincial interest related to land use planning and development. As a key part of the Ontario policy-led planning system, the Provincial Policy Statement sets the policy foundation for regulating the development and use of land. It also supports the provincial goal to enhance the quality of life for all Ontarians."

The PPS is a generic document, providing a consolidated statement of the government policies on land use planning and is issued under section 3 of the Planning Act. Municipalities are the primary implementers of the PPS through policies in their local official plans, zoning by-laws and other planning related decisions. The current 2020 PPS came into effect on May 1, 2020. Policy direction concerning land use compatibility is provided in Section 1.2.6 of the PPS.

From the current 2020 version:

> "1.2.6 Land Use Compatibility
>
> 1.2.6.1 Major facilities and sensitive land uses shall be planned and developed to avoid, or if avoidance is not possible, minimize and mitigate any potential adverse effects from odour, noise and other contaminants, minimize risk to public health and safety, and to ensure the long-term operational and economic viability of major facilities in accordance with provincial guidelines, standards and procedures.

[1] https://www.ontario.ca/document/citizens-guide-land-use-planning/planning-act

1.2.6.2 Where avoidance is not possible in accordance with policy 1.2.6.1, planning authorities shall protect the long-term viability of existing or planned industrial, manufacturing or other uses that are vulnerable to encroachment by ensuring that the planning and development of proposed adjacent sensitive land uses are only permitted if the following are demonstrated in accordance with provincial guidelines, standards and procedures:

a) there is an identified need for the proposed use;

b) alternative locations for the proposed use have been evaluated and there are no reasonable alternative locations;

c) adverse effects to the proposed sensitive land use are minimized and mitigated; and

d) potential impacts to industrial, manufacturing, or other uses are minimized and mitigated."

The goals of the PPS are implemented through Municipal and Provincial policies, as discussed below. Provided the Municipal and Provincial policies, guidelines, standards, and procedures are met, the requirements of the PPS will be met.

3.3 D-Series of Guidelines

The D-series of guidelines were developed by the MECP in 1995 as a means to assess Recommended Minimum 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).[2]

For this assessment, the applicable guideline is Guideline D-6 - *Compatibility between Industrial Facilities and Sensitive Land Uses*.

Sensitive Land Use is defined in the D-Series Guidelines as:

"A building, 'amenity area' or outdoor space where routine or normal activities occurring at reasonably expected times would experience 1 or more 'adverse effect(s)' from contaminant discharges generated by a nearby 'facility'. The 'sensitive land use' may be a part of the natural or built environment. Depending upon the particular 'facility' involved, a sensitive land use and associated activities may include one or a combination of:

I. residences or facilities where people sleep (e.g. single and multi-unit dwellings, nursing homes, hospitals, trailer parks, camping grounds, etc.). These uses are considered to be sensitive 24 hours/day.

II. a permanent structure for non-facility related use, particularly of an institutional nature (e.g. schools, churches, community centres, day care centres).

III. certain outdoor recreational uses deemed by a municipality or other level of government to be sensitive (e.g. trailer park, picnic area, etc.).

[2] https://www.ontario.ca/page/environmental-land-use-planning-guides

IV. certain agricultural operations (e.g. cattle raising, mink farming, cash crops and orchards).

V. bird/wildlife habitats or sanctuaries."

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".

3.3.1 Guideline D-6 Requirements

The guideline specifically addresses issues of air quality, odour, dust, noise, and litter. To minimize the potential to cause an adverse effect, Areas of Influence and Recommended Minimum Separation Distances are included within the guidelines. The Areas of Influence and Recommended Minimum Separation Distances from the guidelines are provided in the table below.

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

Industry Classification	Area of Influence	Recommended Minimum Separation 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, 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	• Noise: Sound not audible off-property • Dust: Infrequent and not intense • Odour: Infrequent and not intense • Vibration: No ground-borne vibration on plant property	• No outside storage • Small-scale plant or scale is irrelevant in relation to all other criteria for this Class	• Self-contained plant or building which produces/ stores a packaged product • Low probability of fugitive emissions	• Daytime operations only • Infrequent movement of products and/ or heavy trucks	• 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	• 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	• Outside storage permitted • Medium level of production allowed	• Open process • Periodic outputs of minor annoyance • Low probability of fugitive emissions	• Shift operations permitted • Frequent movements of products and/ or heavy trucks with the majority of movements during daytime hours	• Magazine printing • Paint spray booths • Metal command • Electrical production • Manufacturing of dairy products • Dry cleaning services • Feed packing plants
Class III Heavy Industry	• 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	• Outside storage of raw and finished products • Large production levels	• Open process • Frequent outputs of major annoyances • High probability of fugitive emissions	• Continuous movement of products and employees • Daily shift operations permitted	• Paint and varnish manufacturing • Organic chemical manufacturing • Breweries • Solvent recovery plants • Soaps and detergent manufacturing • Metal refining and manufacturing

3.3.2 Requirements for Assessments

Guideline D-6 requires that studies be conducted to assess impacts where sensitive land uses are proposed within the Potential Area of Influence of an industrial facility. This report is intended to fulfill this requirement.

The D-series guidelines reference previous versions of the air quality regulation (Regulation 346). However, the D-Series of guidelines are still active, 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., Regulation 419).

3.3.3 Recommended 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 Recommended Minimum Separation Distance, in cases of redevelopment, infilling, and transitions to mixed use, provided that the appropriate studies are conducted and that the relevant air quality and noise guidelines are met.

4.0 Land Use Classification of the Proposed Use

The proposed truck establishment has the following characteristics:

- Outputs: limited dust, odours, or vibration; sound occasionally heard off property;
- Scale: No outside storage of raw materials; no on-site production of goods/services;
- Process: truck parking, no buildings on site; no maintenance activities, low probability of fugitive emissions; and
- Operations/Intensity: frequent movements of heavy trucks, daytime and nighttime operations.

Based on the above, the proposed use has characteristics of both Class I Light and Class II Medium Scale Industries. For this assessment, the Project site is conservatively considered a Class II Medium Scale Industry, with a 70 m Recommended Minimum Separation Distance, and a 300 m Potential Area of Influence. The Guideline D-6 Potential Area of Influence and Recommended Minimum Separation Distance for the Project site can be seen in **Figure 4**.

4.1 Guideline D-6 Summary

As shown in **Figure 4**, there are a number of residences within the 300 m Potential Area of Influence of the Project site. As such Guideline D-6 requirements, an assessment of the potential for noise and air quality impacts from site is require.

There are 8 existing residences located within the 70 m Recommended Minimum Separation Distance, namely:

- 8037 Highway 7;
- 8047 Highway 7;
- 8077 Highway 7;
- 8079 Highway 7;
- 5094 Wellington County Road 29;
- 5068 Wellington County Road 29;
- 8097 Indian Trail; and

- 8093 Indian Trail.

Guideline D-6 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, and within a guideline.

Section 4.10 of the Guideline allows for development within the Recommended Minimum Separation Distance to proceed, provided that a detailed assessment is conducted and that the relevant MECP guidelines and standards are met. This is consistent with previous OMB/ LPAT decisions on separation distances.

Subsequent sections of this report assess the potential for air quality emissions from the Project site. Provided that the air quality from the Project site meet the applicable air quality and noise regulations, the requirements of Guideline D-6 will be met.

5.0 Air Quality, Dust and Odour Assessment

5.1 Industrial Sources

5.1.1 Guidelines and Regulations

Within Ontario, facilities which emit significant amounts of contaminants to the environment are required to obtain and maintain an ECA from the MECP or submit an EASR. Facilities with an ECA/EASR should already meet the MECP guidelines for air quality contaminants at their property line.

5.1.2 Air Quality

Under O.Reg. 419/05, a facility is required to meet prescribed standards for air emissions at their property boundary line and any location off-site. The MECP does not require industries to assess their emissions at elevated points off-site if a receptor does not exist at that location. While the introduction of mid-rise or high-rise residential buildings could trigger a facility to re-assess compliance at new receptor locations, the introduction of new low-rise receptors does not introduce any new receptors, as the facility is already required to be in compliance at grade-level at their property line.

5.1.2.1 Odour

There are a select few compounds that are provincially regulated from an odour perspective; however, there is no formal regulation with respect to mixed odours. Impacts from mixed odours produced by industrial facilities are generally only considered and regulated by the MECP in the presence of persistent complaints (ECO 2010).

The MECP assesses mixed odours, in Odour Units, following draft guidelines. One odour unit (1 OU) has been used as a default threshold. This is the concentration at which 50 % of the population will just detect an odour (but not necessarily identify/recognize or object to it). Recognition of an odour will typically occur between 3 and 5 odour units. The following factors may be considered:

- **Frequency** – How often the odour occurs. The MECP typically allows odours to exceed 1 OU with a 0.5 % frequency.
- **Intensity** – The strength of the odour, in odour units. 1 OU is often used in odour assessments in Ontario.

- **Duration –** How long the odour occurs.
- **Offensiveness** – How objectionable the odour is.
- **Location** – Where the odour occurs. The MECP assesses at odours where human activity is likely to occur.

The MECP has decided to apply odour-based standards to locations "where human activities regularly occur at a time when those activities regularly occur," which is generally accepted to be places that would be considered sensitive such as residences and public meeting places.

5.1.2.2 Dust

Ontario Regulation 419/05 also provides limits for dust, including limits for suspended particulates and dust fall. Under Reg. 419/05, these air quality limits must be met at the property line and all points beyond. This is not changed by the addition of the Project site. That is to say, the existing mutual property line is already a point of reception for dust, and the limits must already be met at that location.

5.1.2.3 Cumulative Assessments

Cumulative impact assessments, examining the combined effects of individual industries, or the combined effects of industry and roadway emissions, are generally not required. Neither the PPS, the D-Series of guidelines, Regulation 419/05, or the current MECP odour assessment protocols require an assessment of cumulative impacts.

Which is not to say that such assessments are never warranted; rather, the need to do so is considered on a case-by-case basis, depending on the nature and intensity of the industrial operation(s), and the nature of the pollutants released. Based on the types of pollutants released by the industries in this area, cumulative effects assessments are not warranted.

5.1.2.4 Local Meteorology

Pre-processed Regional Meteorological data was obtained from the MECP website to generate a wind rose. The surface wind data collected for Kitchener / Waterloo is from 2011 through 2024. The wind rose, as shown in **Figure 5,** represents the frequency of winds blowing from a certain wind direction. As can be seen in the wind rose, predominant winds are from the western quadrants, while winds from the northeast and southeast quadrants may be the least frequent.

5.1.3 Site Visits and Odour and Dust Observations

A site visit was conducted to the area on October 24, 2023 by SLR personnel to identify significant sources of air quality emissions and to identify any significant sources of noise, vibration, odour, or dust in the area surrounding the Project site.

During the site visit, the staff members observed existing industries from the sidewalks and other publicly accessible areas. Wind conditions during the site visit were noted as:

- October 24, 2023 southerly winds, 19 km/h, 19°C, 59%RH

No odours or fugitive dust emissions were detected at the Project site during the site visit.

5.1.4 Assessment of Potential Air Emissions

There are no significant sources of air quality dust, odour or litter emissions associated with Transportation Establishment uses. The primary sources of air emissions are:

- Emissions from idling trucks; and
- Movement of trucks on unpaved surfaces.

As previously discussed in Section 5.1.1, facilities which emit significant amounts of contaminants to the environment are required to obtain and maintain an ECA from the MECP or submit an EASR. However, Ontario Regulation 524/98 sets out ECA approval exemptions for source which are known to have negligible impacts and a low probability for adverse effects. These exemptions include moving motor vehicles (*Environmental Protection Act*, Section 9(3)).

The operation of trucks on the property has the potential to emit, PM, VOCs, NO_x, and SO_2. These air emissions are emitted from the operation of internal fuel combustion engines, brake wear, tire wear, the breakdown of dust/debris on roadways and movements on unpaved roadways.

The emissions of VOCs, NO_x, and SO_2 from truck engines (tailpipes) are specifically exempted from MECP permitting requirements by Section 9(3)(f) of the EPA and are addressed in Sections 21 to 23 of the EPA and by O. Reg. 457/19: Vehicle Emissions. Based on our experience, the types and numbers of vehicles used, their locations, and on the MECP guidance, adverse impacts from tailpipe emissions are highly unlikely and an assessment impacts of tailpipe emissions is not required.

Therefore, under MECP regulations, the air emission sources from the idling of vehicles are exempt from ECA or EASR requirements.

There is potential for fugitive dust emissions from the trucks moving on unpaved roads within the Project site. The entry to the facility will be paved with asphalt, but the rest of the site used for parking will remain unpaved. Therefore, it is recommended that vehicles speeds on site be limited to less than 20 km/hour and that emissions of dust from the unpaved roads be controlled through the use of dust best management practices such as the application of water.

According to the concept plan provided by the client, the perimeter of the Project site will be landscaped and be setback 20 m from the property line.

A wind frequency distribution diagram (a wind rose) is provided in **Figure 5**. Prevailing winds are from the west, which will generally direct emissions from the Project site away from the majority of residences in the area.

With the use of dust best management practices on the unpaved Project site roads, adverse air quality impacts from the Project site sources are not anticipated at the nearby sensitive receptors.

5.2 Summary of Air Quality, Dust and Odour Conclusions and Recommendations

The potential air quality emissions from the Project site, including dust and odour, have been assessed.

There is potential for fugitive dust emissions from the trucks moving on unpaved roads within the Project site. Therefore, it is recommended that vehicles speeds on site be limited to less than 20 km/hour and that emissions of dust from the unpaved roads be controlled through the use of dust best management practices such as the application of water.

With the use of dust best management practices on the unpaved Project site roads, adverse air quality impacts from the Project site sources will be controlled and the Project site is anticipated to be compatible with the surrounding land uses from an air quality perspective.

6.0 Noise Assessment

6.1 Industrial (Stationary) Sources

6.1.1 Guidelines

6.1.1.1 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 Publications NPC-205 and NPC-232, 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 dBAI.

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 local area would be considered to be a “Class 2 Semi-Rural” area under the noise guidelines, dominated by road traffic noise along Highway 7 and Wellington Road 29 during the day, and by the natural sounds during the evening and night. The following tables set out the exclusion limits from the guideline.

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

Time of Day	Hourly Sound Level Limit – Class 2 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	45
11 pm to 7 am	45	n/a[1]
Notes: [1] Sound level limits are not applicable during night-time hours at outdoor points of reception.		

Table 4: NPC-300 Minimum Exclusionary Limits for Impulsive Sounds (L_{LM}(1-hr), dBAI)

Time of Day	No. of Impulses in a 1-hour Period	Hourly Sound Level Limit – Class 2 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[1]
	7 to 8	50	n/a[1]
	5 to 6	55	n/a[1]
	4	60	n/a[1]
	3	65	n/a[1]
	2	70	n/a[1]
	1	75	n/a[1]
Notes: [1] Sound level limits are not applicable during night-time hours at outdoor points of reception.			

6.1.2 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 areas surrounding the Project site, the stationary noise guidelines only apply to:

- Individual residences; and
- Outdoor amenity area associated with the individual residences.

All of the above have been considered as noise sensitive points of reception (POR) in the analysis.

The acoustic environment surrounding the proposed development is considered a Class 2 area, as roadway noise and commercial activities are expected to be dominant and audible during the daytime and evening, with lower sound levels during the night-time.

6.1.3 Points of Reception

SLR staff completed a site visit on November 7th, 2023, to the Project site and surrounding area to verify the existing noise sensitive PORs as shown in the available aerial photography. The Project site is currently agriculture land. Existing noise sensitive PORs with the potential to be impacted by the proposed development are individual residential dwellings surrounding the Project site. **Table 5** summarizes the modelled PORs included in this assessment. Modelled POR locations include top-floor windows along worst-case (i.e., most exposed) building façades of the residential dwellings, and the associated outdoor points of reception (OPOR). The location of each POR and associated backyard/front yard OPOR are shown in **Figure 6**. The windows of the dwellings were assessed at a 1st storey height (1.5 m) for single storey dwellings, and for 2-storey dwelling, at a 2nd storey height (4.5 m). As a conservative assessment of noise impacts, all windows were assumed to interface with noise-sensitive spaces (e.g., a living/dining room or bedroom).

Table 5: Worst-Case Point of Reception Summary

Receptor ID	Address	POR Location	Approx. Distance to Facility Property Line (m)	POR Height (m)
POR 01 - Residence	8077 Highway, Guelph/Eramosa	1st floor window	--	1.5
POR 02 - Residence	8079 Highway 7, Guelph/Eramosa	1st floor window	--	1.5
POR 03 - Residence	5092 Wellington County Road, Guelph/Eramosa	1st floor window	--	1.5
POR 04 - Residence	5068 Wellington County Road, Guelph/Eramosa	1st floor window	--	1.5
POR 05 - Residence	8097 Indian Trail, Guelph/Eramosa	1st floor window	--	1.5
POR 06 - Residence	8093 Indian Trail, Guelph/Eramosa	1st floor window	--	1.5
POR 07 - Residence	8019 Indian Trail, Guelph/Eramosa	1st floor window	325	1.5
POR 08 - Residence	8037 Highway 7, Guelph/Eramosa	2nd floor window	--	4.5
POR 09 - Residence	8047 Highway 7, Guelph/Eramosa	1st floor window	--	1.5
Notes: "--" property is adjacent to Project site.				

6.1.4 Stationary Noise Sources

Noise sources associated with the proposed truck parking facility include the following:

- Truck movements;
- Idling trucks; and
- Impulsive noise from coupling/uncoupling from trucks and trailers.

The truck parking facility will operate 24 hours. Based on truck volumes provided by the Project transportation consultant (Paradigm Transportation Solutions Limited), truck operations (dropping off / picking up trailers) will have worst case incoming/outgoing peak hour truck traffic of 68 heavy trucks during the daytime, 14 during the evening, and 14 during night-time hours. Truck volumes are provided for reference in **Appendix B**. The continuous and impulsive noise source locations are shown in **Figures 7** and **8**, respectively.

6.1.4.1 Continuous Sources

Noise sources associated with the proposed truck parking facility include the following:

- Sixty-eight (68) moving trucks during a worst-case hour at daytime. Moving trucks travelling at 10 km/hr were modelled, which is conservative;
- Fourteen (14) moving trucks during a worst-case hour at evening. Moving trucks travelling at 10 km/hr were modelled, which is conservative; and
- Trucks are expected to occasionally idle during dropping off / picking up the trailers.
    - Sixty-eight (68) trucks idling for approximately 5 minutes each during a worst-case hour at daytime; and
    - Fourteen (14) trucks idling for 5 approximately minutes each during a worst-case hour at evening and night-time.
- Per **Table 3**, the applicable guideline limits are:
    - At PORs: 50 dBA during the daytime and evening; and 45 dBA during nighttime hours; and
    - At the OPORs: 50 dBA during the daytime and 45 dBA during evening. OPORs are not assessed during the night-time hours.

6.1.4.2 Impulsive Sources

Trucks will couple to trailers to pick them up from the facility, decouple to trailers to drop them off at the facility, or decouple to trailers to drop them off at the facility and pick up another trailer and then leave the facility. Impulsive noise is produced by the trucks and trailers coupling and uncoupling.

- Coupling/uncoupling will occur during all times of the day;
- The worst-case number of trucks coupling to the trailers was considered. It was assumed that:
    - Total of 68 coupling events could occur during worst-case hour for daytime which is equal to the number of trucks entering and leaving the truck parking facility during daytime;

  - Total of 14 coupling events could occur during worst-case hour for evening and night-time which is equal to the number of trucks entering and leaving the truck parking facility during evening and night-time; and

- Per **Table 4**, the applicable impulsive guideline limit is 50 dBAI for 9 or more impulses at the PORs and OPOR during daytime and evening, and 45 dBAI for 9 or more impulses during night-time hours at PORs.

The predictable worst-case operation is expected to occur during a night-time hour between 6:00 am and 7:00 am, but could potentially occur during any hour of the day.

Sound level data used in the assessment were based on information contained in the SLR in-house database. Noise emission data used in the assessment is included for reference in **Appendix B**.

6.1.5 Stationary Source Modelling

Noise impacts from stationary sources were modelled using Cadna/A, a software implementation of the internationally recognized ISO-9613-2 environmental noise propagation algorithms. Cadna/A / ISO-9613 is the preferred noise model of the MECP. The ISO-9613 equations account for:

- Source to receiver geometry;
- Distance attenuation;
- Atmospheric absorption;
- Reflections off of the ground and ground absorption;
- Reflections off of vertical walls; and
- Screening effects of buildings, terrain, and purpose-built noise barriers (noise walls, berms, etc.).

The following additional parameters were used in the modelling, which are consistent with providing a conservative (worst-case) assessment of noise levels:

- Temperature: 10°C;
- Relative Humidity: 70%;
- Ground Absorption G: G=1 (absorptive) as default global parameter was applied, as the surrounding area is primarily agricultural land, with localized ground absorption G=0.3 considered for the pavement of the truck parking facility;
- Reflection: An order of reflection of 1 was used (accounts for noise reflecting from walls);
- Wall Absorption Coefficients: Set to 0.37 (37% of energy is absorbed, 63% reflected); and
- Terrain: Assumed to be flat.

6.1.6 Predicted Sound Levels

6.1.6.1 Scenario 1: Continuous Sources

Predictable-worst case daytime/evening/night-time sound levels from the facility continuous noise sources were assessed at the surrounding noise-sensitive PORs identified in **Section 6.1.3**.

The predicted sound levels are summarized in **Table 6** and are shown in **Figure 9**.

Table 6: Predicted Worst-Case Sound Levels at POR – Continuous Noise Sources

Point of Reception ID	Predicted Worst-Case Sound Level (L_{eq} (1-hour) (dBA))			Applicable Guideline Limit (L_{eq} (1-hr), (dBA))			Meets Applicable Limits (Y/N)?
	Daytime	Evening	Night-time	Daytime	Evening	Night-time	
POR01	48	41	41	50	50	45	Y
POR02	47	41	41	50	50	45	Y
POR03	47	41	41	50	50	45	Y
POR04	49	42	42	50	50	45	Y
POR05	47	40	40	50	50	45	Y
POR06	48	41	41	50	50	45	Y
POR07	38	31	31	50	50	45	Y
POR08	47	41	41	50	50	45	Y
POR09	49	42	42	50	50	45	Y
Notes: [1] Sound levels shown represent the calculated worst-case impact along the identified facade.							

The predicted sound levels at all PORs meet the applicable Class 2 minimum exclusionary limits during all time periods.

The predicted worst-case noise impacts from the continuous noise sources at OPOR associated with POR are summarized in **Table 7** and shown in **Figure 10** for daytime and evening periods. The predicted sound levels at the OPORs are predicted to be below 50 dBA during daytime and 45 dBA during evening. The sound level contours also show that all OPOR sound levels are predicted to meet applicable guideline limits. Therefore, mitigation measures are not anticipated to be required for the facility continuous noise sources.

Table 7: Predicted Worst-Case Sound Levels at OPOR – Continuous Noise Sources

Outdoor Assessment Location [1]	Continuous Source Sound Levels (L_{eq} (1-hour) (dBA))		Applicable Guideline Limit (L_{eq} (1-hr), (dBA))	Meets Applicable Limits (Y/N)?
	Daytime	Evening	Daytime/Evening	
OPOR01	50	43	50/45	Y
OPOR02	49	42	50/45	Y
OPOR03	47	41	50/45	Y
OPOR04	50	44	50/45	Y
OPOR05	48	42	50/45	Y
OPOR06	49	42	50/45	Y
OPOR07	40	33	50/45	Y
OPOR08	47	41	50/45	Y
OPOR09	50	44	50/45	Y
Notes: [1] Outdoor assessment locations are shown in **Figure 10**.				

6.1.6.2 Scenario 2: Impulsive Sources from Truck Trailer Coupling/Uncoupling

Predictable-worst case daytime/evening/night-time sound levels from the facility impulsive noise sources were assessed at the surrounding noise-sensitive PORs identified in **Section 6.1.3**.

The predicted sound levels are summarized in **Table 8**, and shown in **Figure 11**.

Table 8: Predicted Worst-Case Sound Levels at POR – Impulsive Noise Sources

Point of Reception ID	Predicted Worst-Case Sound Level (L_{LM} (1-hour) (dBAI))		Applicable Guideline Limit (L_{LM} (1-hr), (dBAI))		Meets Applicable Limits (Y/N)?
	Daytime/Evening	Night-time	Daytime/Evening	Night-time	
POR01	46	48	50	45	N
POR02	46	49	50	45	N
POR03	46	49	50	45	N
POR04	49	51	50	45	N
POR05	45	46	50	45	N
POR06	47	49	50	45	N
POR07	38	37	50	45	Y
POR08	48	49	50	45	N
POR09	49	51	50	45	N
Notes: [1] Sound levels shown represent the calculated worst-case impact along the identified facade.					

Based on the above results, the NPC-300 guideline limits are predicted to be exceeded at all PORs during night-time, except POR07. Therefore, mitigation measures are anticipated to be required for the facility impulsive noise sources.

The predicted worst-case noise impacts from the impulsive noise sources at OPOR associated with POR are summarized in **Table 9** and shown in **Figure 12** for daytime/evening period. The predicted sound levels at the OPOR are predicted to exceed 50 dBAI at OPOR 04 during daytime and evening, and OPOR01 and OPOR09 during evening. Therefore, mitigation measures are anticipated to be required for the facility impulsive noise sources. Sound level contours are also shown for an assessment height of 1.5 m above grade.

Table 9: Predicted Worst-Case Sound Levels at OPOR – Impulsive Noise Sources

Outdoor Assessment Location [1]	Impulsive Source Sound Levels (L_{LM} (1-hour) (dBAI))		Applicable Guideline Limit (L_{LM} (1-hour) (dBAI))	Meets Applicable Limits (Y/N)?
	Daytime	Evening	Daytime/Evening	
OPOR01	48	51	50	N
OPOR02	47	50	50	Y
OPOR03	47	50	50	Y
OPOR04	51	52	50	N
OPOR05	47	48	50	Y
OPOR06	48	50	50	Y
OPOR07	40	39	50	Y
OPOR08	48	50	50	Y
OPOR09	50	53	50	N

Notes: [1] Outdoor assessment locations are shown in **Figure 12**.

6.1.7 Noise Mitigation Measures

6.1.7.1 Acoustics Berms/Barriers

Noise mitigation measures, in the form of acoustic barrier, berm or berm/barrier combination, are required to address impulse noise from on site truck trailer coupling and uncoupling to all the receptors except southern receptor (POR07) during night-time. Sound from impulse sources can be mitigated to meet Class 2 minimum exclusionary limits with an inclusion of:

1 245 m long and 3.2 m high acoustic barrier, berm or berm/barrier combination along the portion of property line to the northwest facing western receptors POR01, POR02 and POR03;

2 200 m long and 4.0 m high acoustic barrier, berm or berm/barrier combination along the portion of the property line to the north facing northern receptor (POR04);

3 175 m long and 3.2 m high acoustic barrier, berm or berm/barrier combination along the portion of property line to the east facing eastern receptors POR05 and POR06; and

4 320 m long and 3.7 m high acoustic barrier, berm or berm/barrier combination along the portion of southwest edge of pavement facing western receptors POR08 and POR09.

Acoustic barriers can be composed of solid walls, panels and can include being placed on top of a berm. The walls/panels should be selected so that they have sufficient mass to adequately attenuate the noise (a minimum of 20 kg/m^2 surface density).

The panels and frames should be free of gaps and cracks on the sides and bottom. The system should also be designed to withstand any wind loading. Any gaps under the barrier that are necessary for drainage purposes should be minimized and localized, so that the acoustical performance of the barrier is maintained. There are many commercial products and wooden fence designs which can meet these specifications.

The location and dimensions of the acoustic barrier, berm or berm/barrier combination are shown in **Figure 13**.

The predicted sound levels with an inclusion of acoustic barrier, berm or berm/barrier combination at surrounding noise sensitive PORs are provided in **Table 10** and shown in **Figure 14**.

Table 10: Predicted Worst-Case Sound Levels at POR – Impulsive Noise Sources – Mitigated

Point of Reception ID	Predicted Worst-Case Sound Level (L_{LM} (1-hour) (dBAI))			Applicable Guideline Limit (L_{LM} (1-hr), (dBAI))		Meets Applicable Limits (Y/N)?
	Daytime	Evening	Night-time	Daytime/Evening	Night-time	
POR01	41	43	43	50	45	Y
POR02	41	43	43	50	45	Y
POR03	42	44	44	50	45	Y
POR04	44	45	45	50	45	Y
POR05	41	42	42	50	45	Y
POR06	43	44	44	50	45	Y
POR07	38	35	35	50	45	Y
POR08	43	44	44	50	45	Y
POR09	44	45	45	50	45	Y
Notes: [1] Sound levels shown represent the calculated worst-case impact along the identified facade.						

The predicted sound levels with an inclusion of acoustic barrier, berm or berm/barrier combination at OPOR associated with POR are summarized in **Table 11** and shown in **Figure 15** for daytime/evening period. The predicted sound levels at the OPOR are predicted to be below 50 dBAI during daytime and evening. The sound level contours also show that all OPOR sound levels are predicted to meet applicable guideline limits.

Table 11: Predicted Worst-Case Sound Levels at OPOR – Impulsive Noise Sources – Mitigated

Outdoor Assessment Location [1]	Impulsive Source Sound Levels (L_{LM} (1-hour) (dBAI))		Applicable Guideline Limit (L_{LM} (1-hour) (dBAI))	Meets Applicable Limits (Y/N)?
	Daytime	Evening	Daytime/Evening	
OPOR01	41	44	50	Y
OPOR02	39	42	50	Y
OPOR03	41	43	50	Y
OPOR04	44	45	50	Y
OPOR05	41	42	50	Y
OPOR06	42	44	50	Y
OPOR07	40	37	50	Y
OPOR08	43	44	50	Y
OPOR09	45	46	50	Y

Notes: [1] Outdoor assessment locations are shown in **Figure 15**.

6.2 Summary of Noise Conclusions and Recommendations

The potential for noise impacts from the proposed property's stationary sources have been assessed. The requirements of MECP Guideline D-6 are met. With the inclusion of the noise mitigation measures, the applicable MECP Publication NPC-300 guideline limits are met at the surrounding noise-sensitive receptors. No additional noise mitigation measures are required.

Under Ontario Regulation 1/17, the Facility should complete the require applications and studies, and register with the Ministry of the Environment on the Environmental Activity and Sector Registry (EASR), prior to the start of construction.

7.0 Conclusions

SLR Consulting (Canada) Ltd. (SLR), was retained by Eramosa Farms Ltd., to conduct a Compatibility / Mitigation Study focusing on air quality, odour, dust, and noise in support of a Zoning By-law Amendment (ZBA) application with Wellington County and Township of Guelph Eramosa for the proposed development. The development site is located at 8075 Highway 7 in Guelph Eramosa, Ontario ("the Project site").

This assessment has considered:

- Air quality, odour, and dust emissions; and
- Environmental noise.

SLR has reviewed the surrounding land uses in the area with respect to the following guidelines:

- The Provincial Policy Statement;
- The Provincial Growth Plan;
- Ministry of the Environment, Conservation and Parks ("MECP") Guidelines D-1 and D-6;

- Ontario Regulation 419/05: *Air Pollution – Local Air Quality* and its associated air quality standards and assessment requirements;
- The MECP draft policies on odour impacts and assessment; and
- MECP Publication NPC-300 noise guidelines for industrial and transportation.

There is potential for fugitive dust emissions from the trucks moving on unpaved roads within the Project site. Therefore it is recommended that vehicles speeds on site be limited to less than 20 km/hour and that emissions of dust from the unpaved roads be controlled through the use of dust best management practices such as the application of water.

With the use of dust best management practices on the unpaved Project site roads, adverse air quality impacts from the Project site sources will be controlled and the Project site is anticipated to be compatible with the surrounding land uses from an air quality perspective.

The potential for noise impacts from the proposed property's stationary sources have been assessed. With the mitigation measures outlined in **Section 6.1.7**, the requirements of MECP Guideline D-6 and the applicable MECP Publication NPC-300 guideline limits are predicted to be met at the surrounding noise-sensitive receptors. Therefore, the Project site is anticipated to be compatible with the surrounding land uses from a noise perspective.

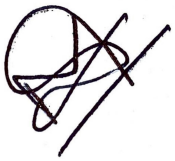
8.0 Closure

Should you have questions on the above report, please contact the undersigned.

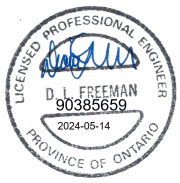
Regards,

SLR Consulting (Canada) Ltd.

Alice Najjar, B.A.
Air Quality Scientist



Sabah Ersum, M.Eng.
Acoustics Consultant



Diane Freeman, P.Eng. FEC, FCAE,
Principal, Air Quality

Aaron Haniff, P.Eng.
Principal Acoustics Engineer

9.0 References

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Figures

Compatibility Mitigation Study, Air Quality and Environmental Noise

8075 Highway 7 – Guelph Eramosa

Eramosa Farms Ltd.

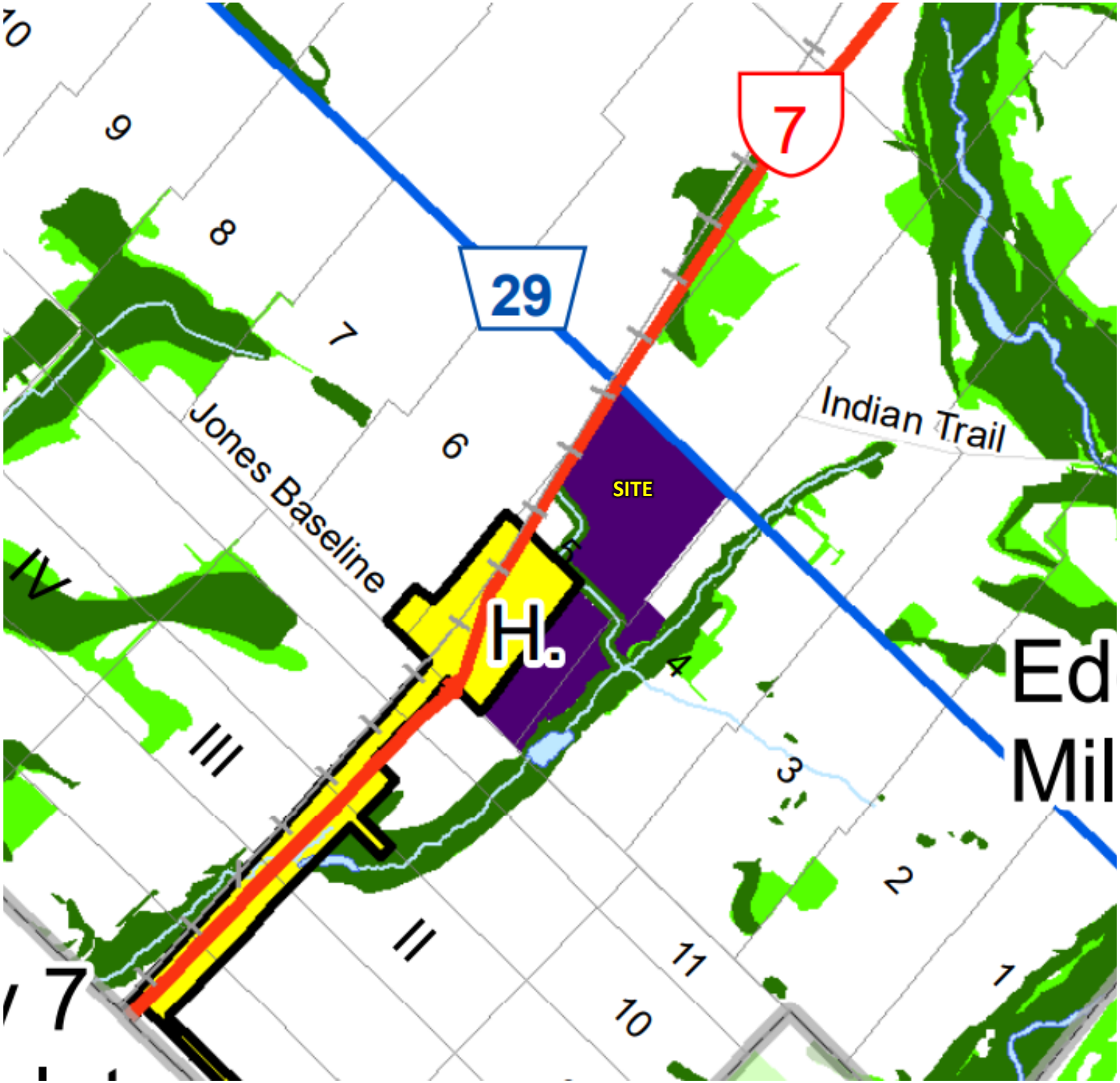
SLR Project No.: 241.031181.00001

May 14, 2024

Aerial Photography from Bing Maps

ERAMOSA FARMS LTD.	True North	Scale: 1:1,500	METRES
8075 HIGHWAY 7 – GUELPH ERAMOSA, ONTARIO		Date: April 2024 Rev 0.0	Figure No. 1
SITE AND CONTEXT PLAN		Project No. 241.031181.00000	

SLR



The Greenlands System
- Core Greenlands
- Greenlands
- Earth Science ANSI

The Rural System
- Prime Agricultural
- H. Hamlet
- Mineral Aggregate Area
- Recreational
- Rural Employment Area
- C.R. Country Residential
- PA Policy Area

The Urban System
- U.C. Primary Urban Centre

True North

ERAMOSA FARMS LTD.

8075 HIGHWAY 7 – GUELPH
ERAMOSA, ONTARIO

COUNTY OF WELLINGTON
OFFICIAL PLAN
GUELPH/ERAMOSA

Scale: n/a		METRES
Date: April 2024	Rev 0.0	Figure No. **2**
Project No. 241.031181.00000		

SLR

Legend

- Township Boundary
- Property Boundary
- Flood Suffix (f) Applies

Zoning

- Agricultural (A)
- Hamlet Mixed Use (C3)
- Environmental Protection (EP)
- Open Space (OS1)
- Rural Residential (RR)

True North

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8075 HIGHWAY 7 – GUELPH
ERAMOSA, ONTARIO

GUELPH/EROMSA ZONING BY-LAW 40/2016

Scale: n/a		METRES
Date: April 2024	Rev 0.0	Figure No. 3
Project No. 241.031181.00000		

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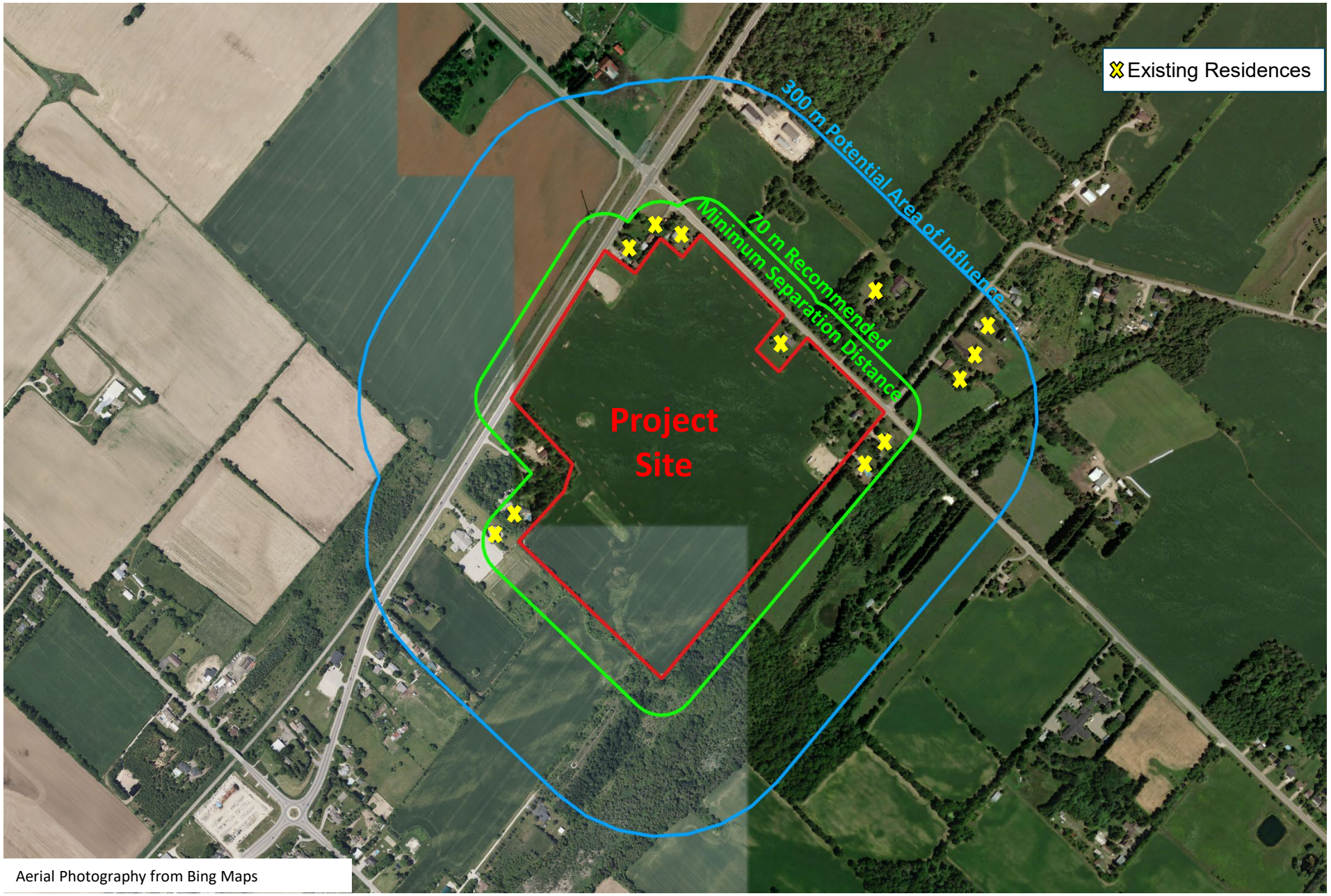

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8075 HIGHWAY 7 – GUELPH ERAMOSA, ONTARIO

CLASS II D-6 AREAS OF INFLUENCE AND
RECOMMENDED MINIMUM SEPARATION DISTANCES

True North

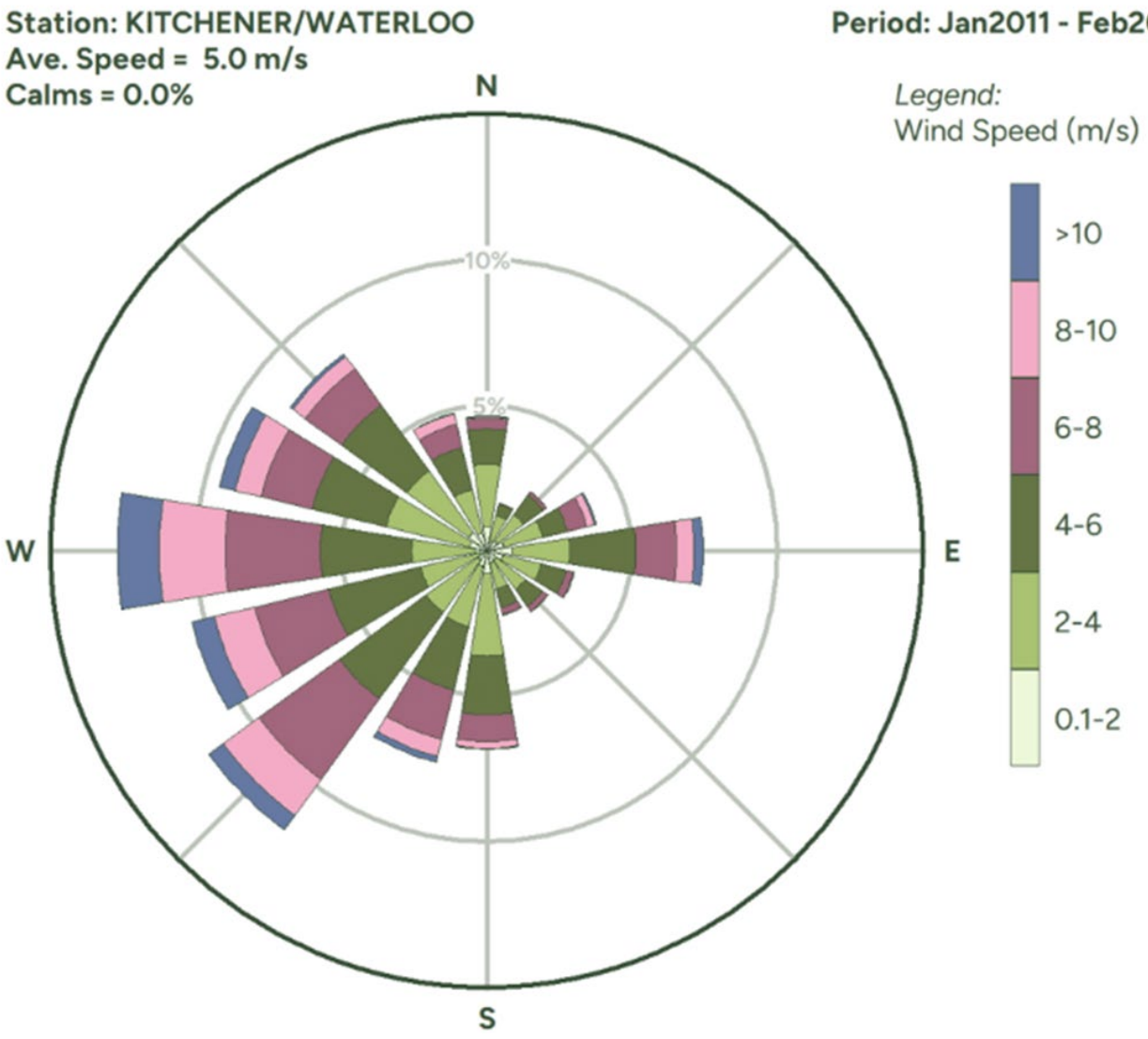
Scale: 1:10,000 METRES

Date: April 2024 Rev 0.0

Project No. 241.031181.00000

Figure No. **4**

SLR



True North

ERAMOSA FARMS LTD.

8075 HIGHWAY 7 – GUELPH
ERAMOSA, ONTARIO

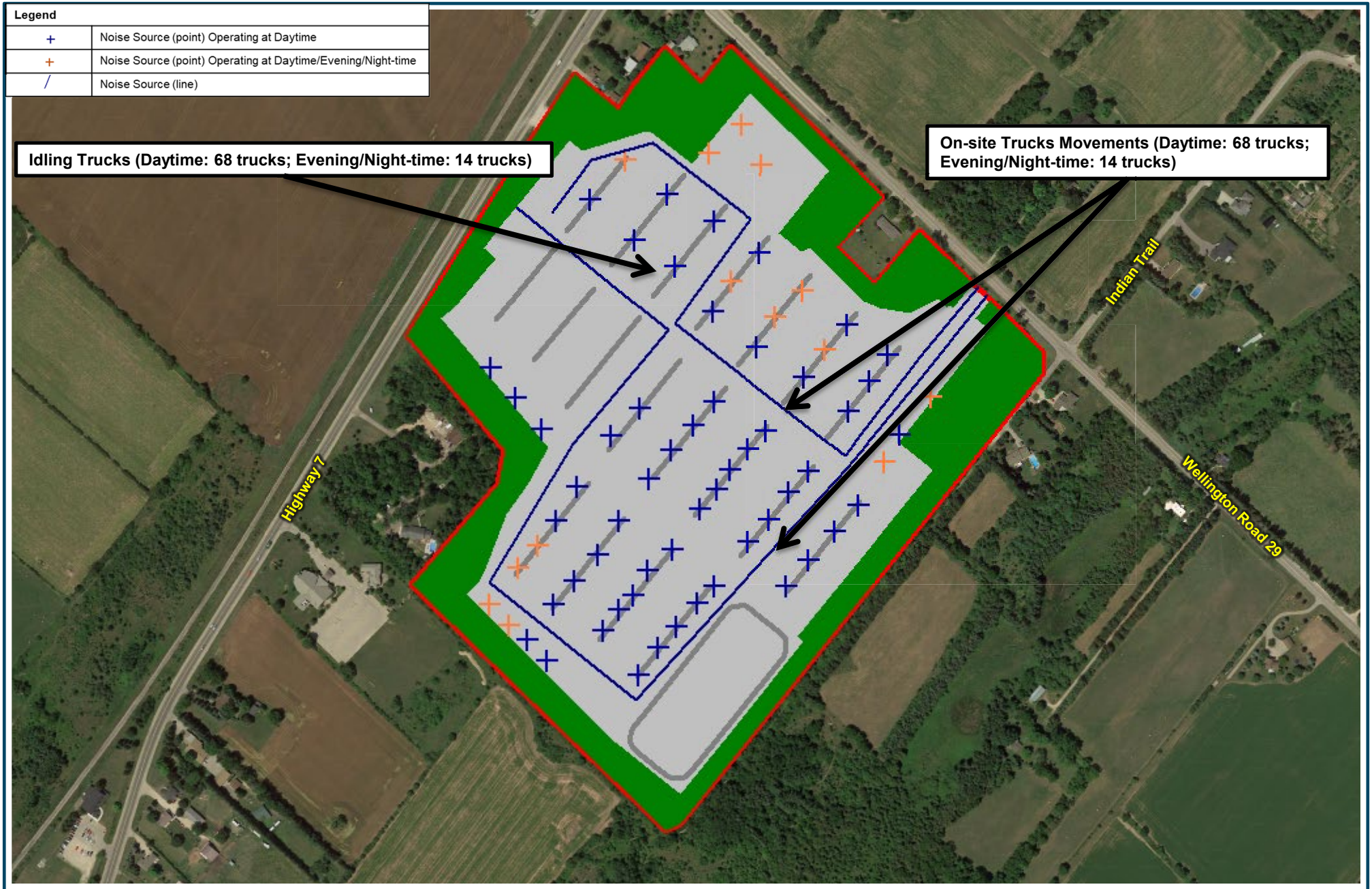
WIND FREQUENCY DISTRIBUTION DIAGRAM (WIND ROSE)
KITCHENER/WATERLOO, ONTARIO
2011-2024

Scale: n/a		METRES
Date: April 2024	Rev 0.0	Figure No. **5**
Project No. 241.031181.00000		

SLR

ERAMOSA FARMS LTD.	True North	Scale: 1:8,000	METRES
8075 HIGHWAY 7 – GUELPH ERAMOSA, ONTARIO		Date: April 2024 Rev 0.0	Figure No. **6**
MODELLED POINTS OF RECEPTION		Project No. 241.031181.00000	

SLR



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8075 HIGHWAY 7 – GUELPH ERAMOSA, ONTARIO

MODELLED STATIONARY NOISE SOURCES – CONTINUOUS

True North

Scale: 1:5,500

METRES

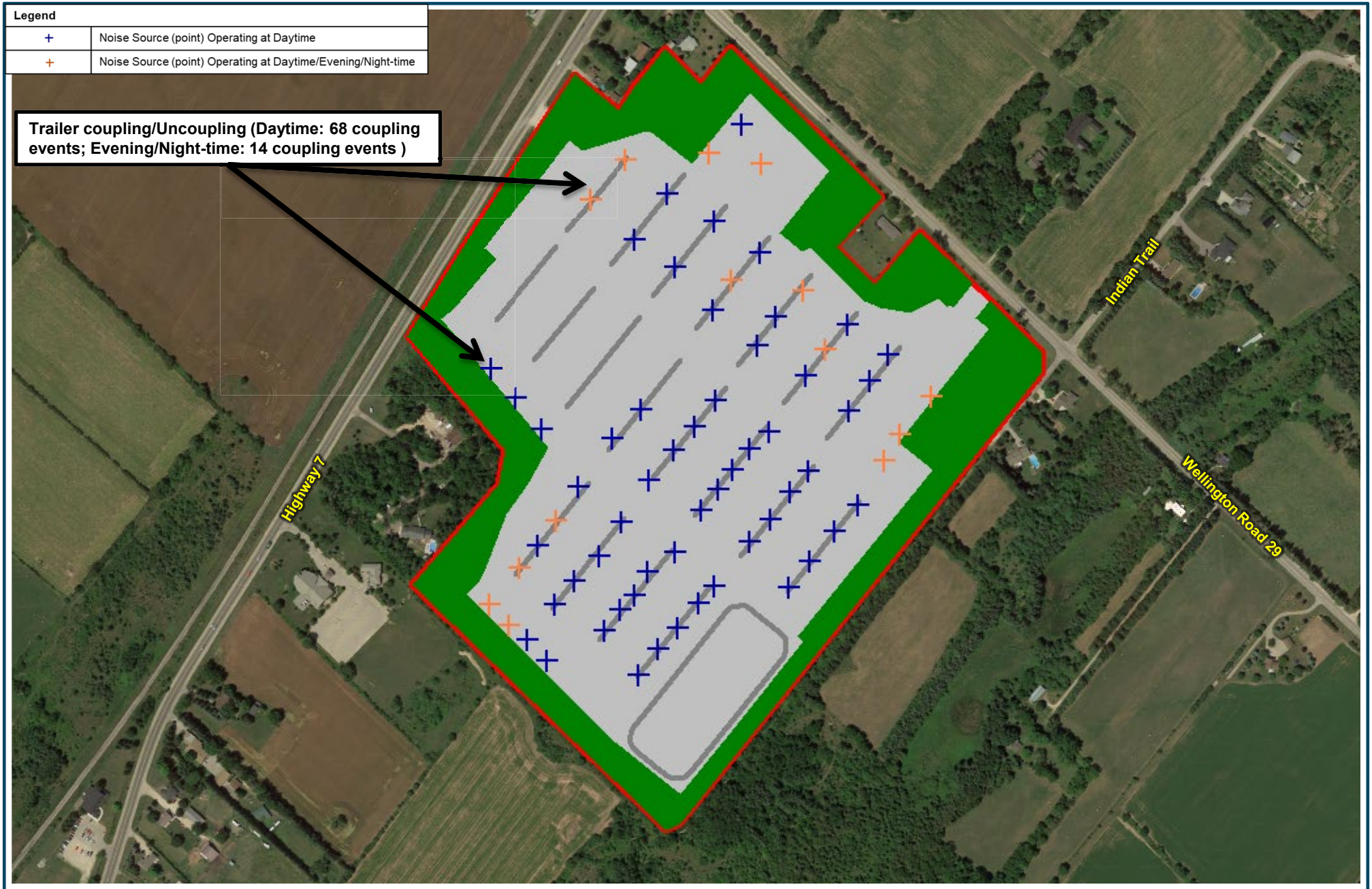
Date: April 2024

Rev 0.0

Figure No. **7**

Project No. 241.031181.00000

SLR



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8075 HIGHWAY 7 – GUELPH ERAMOSA, ONTARIO

MODELLED STATIONARY NOISE SOURCES – IMPULSIVE

True North

Scale: 1:5,500

METRES

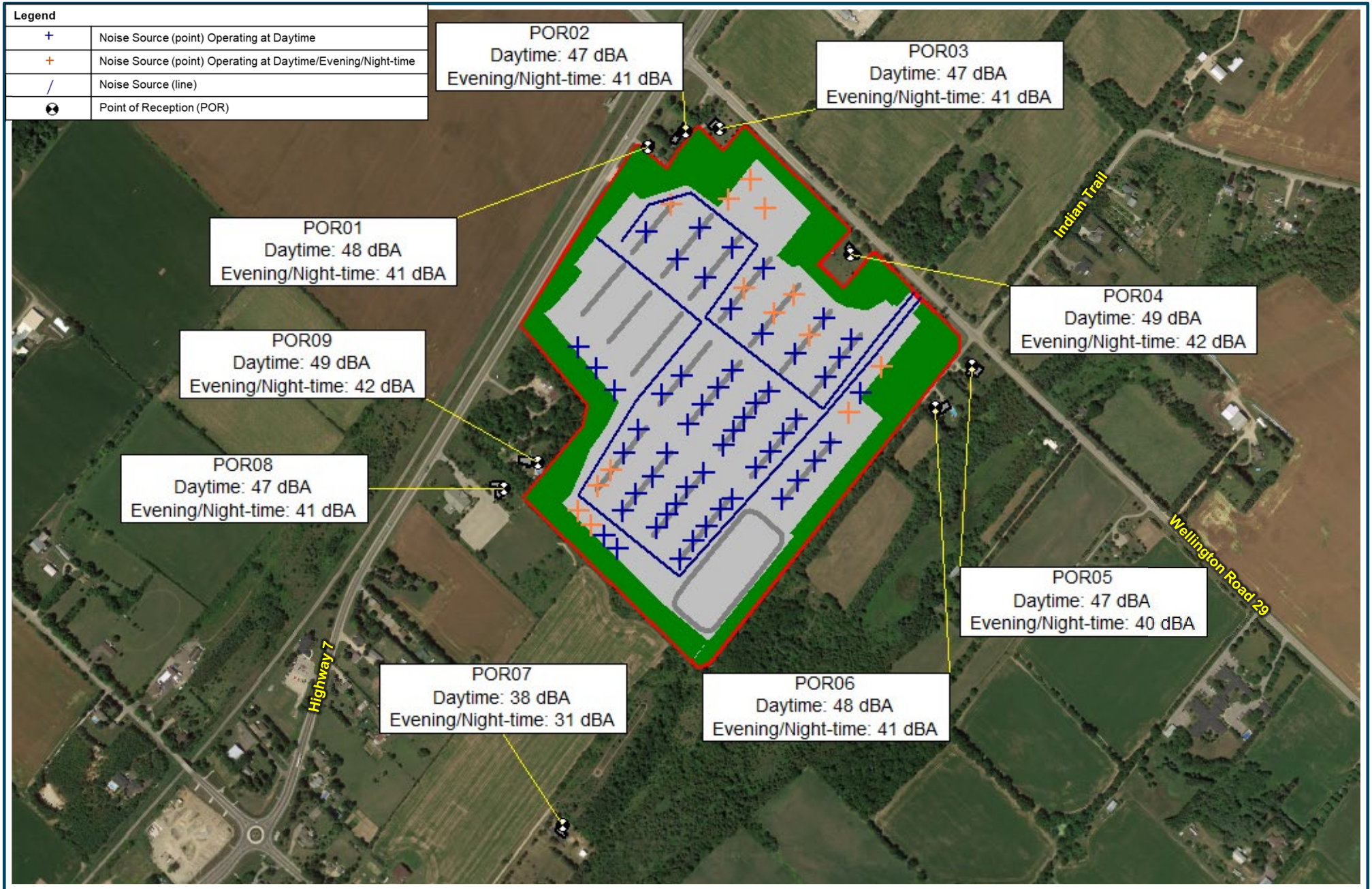
Date: April 2024

Rev 0.0

Figure No. **8**

Project No. 241.031181.00000

SLR



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8075 HIGHWAY 7 – GUELPH ERAMOSA, ONTARIO

MODELLED STATIONARY NOISE IMPACTS POR – CONTINUOUS SOURCES – WORST-CASE HOUR

True North

Scale: 1:8,000

METRES

Date: April 2024

Rev 0.0

Project No. 241.031181.00000

Figure No. **9**

SLR

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8075 HIGHWAY 7 – GUELPH ERAMOSA, ONTARIO

MODELLED STATIONARY NOISE IMPACTS OPOR – CONTINUOUS SOURCES – WORST-CASE HOUR

True North

Scale: 1:10,000

METRES

Date: April 2024

Rev 0.0

Project No. 241.031181.00000

Figure No. **10**

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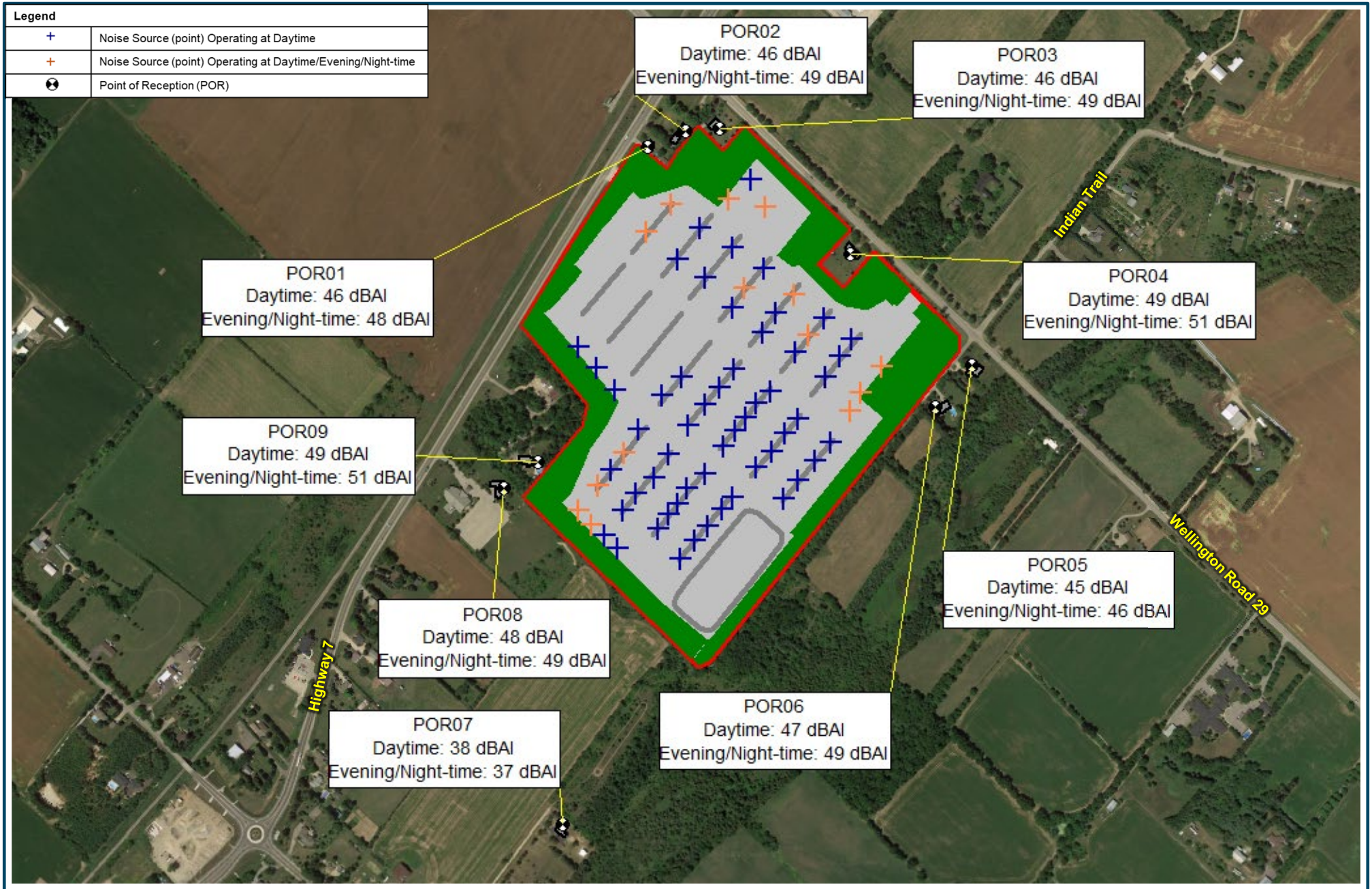

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8075 HIGHWAY 7 – GUELPH ERAMOSA, ONTARIO

MODELLED STATIONARY NOISE IMPACTS POR – IMPULSIVE SOURCES – WORST-CASE HOUR – UNMITIGATED

True North

Scale: 1:8,000 METRES

Date: April 2024 Rev 0.0

Project No. 241.031181.00000

Figure No. **11**

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ERAMOSA FARMS LTD.

8075 HIGHWAY 7 – GUELPH ERAMOSA, ONTARIO

MODELLED STATIONARY NOISE IMPACTS OPOR – IMPULSIVE SOURCES – WORST-CASE HOUR - UNMITIGATED

True North

Scale: 1:8,000

METRES

Date: April 2024

Rev 0.0

Project No. 241.031181.00000

Figure No. **12**

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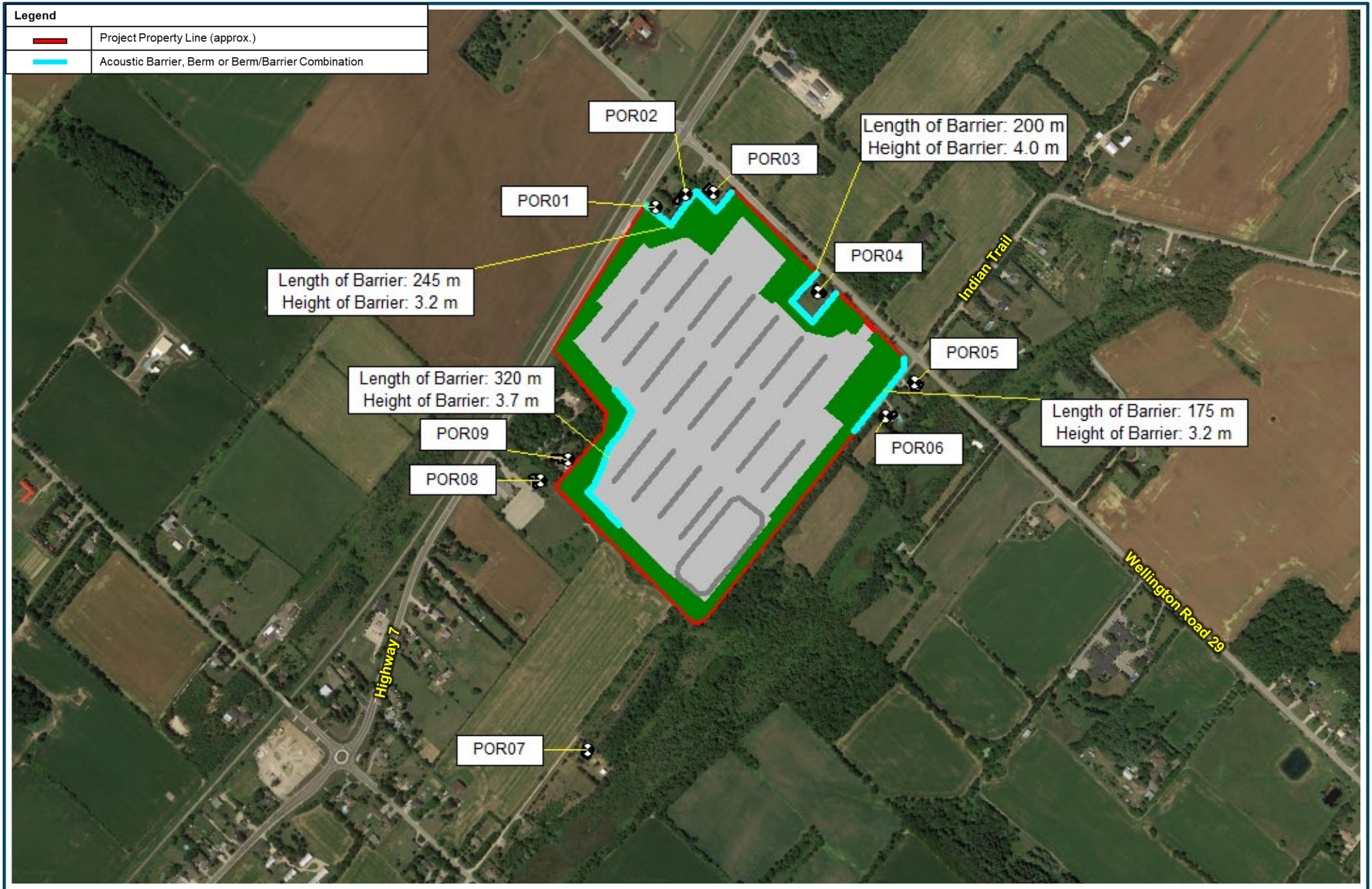


ERAMOSA FARMS LTD.

8075 HIGHWAY 7 – GUELPH ERAMOSA, ONTARIO

ACOUSTICS BERM/BARRIER LAYOUT

True North

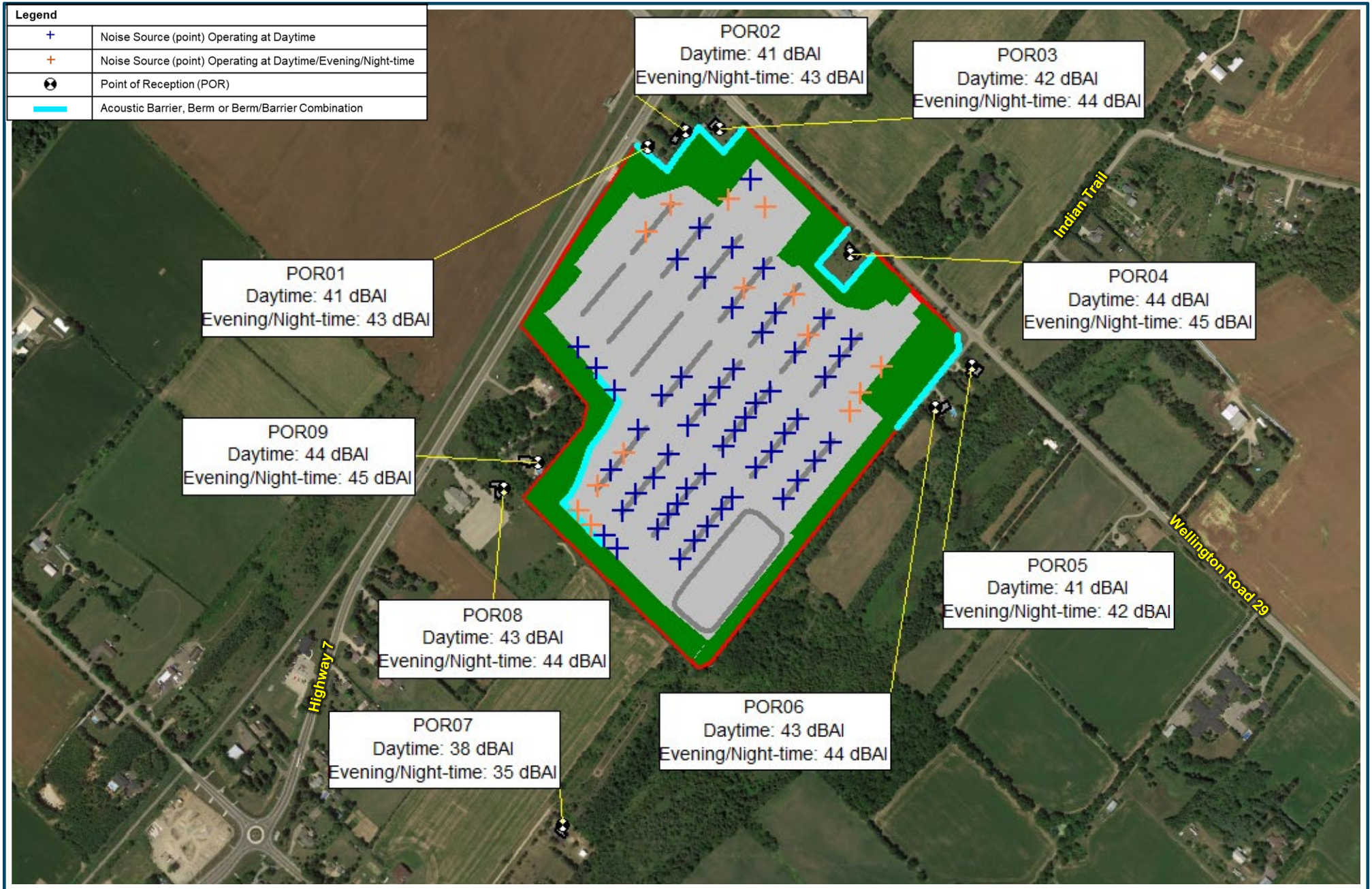
Scale: 1:10,000 METRES

Date: April 2024 Rev 0.0

Project No. 241.031181.00000

Figure No. **13**

SLR



ERAMOSA FARMS LTD.

8075 HIGHWAY 7 – GUELPH ERAMOSA, ONTARIO

MODELLED STATIONARY NOISE IMPACTS POR – IMPULSIVE SOURCES – WORST-CASE HOUR – MITIGATED

True North

Scale: 1:8,000

METRES

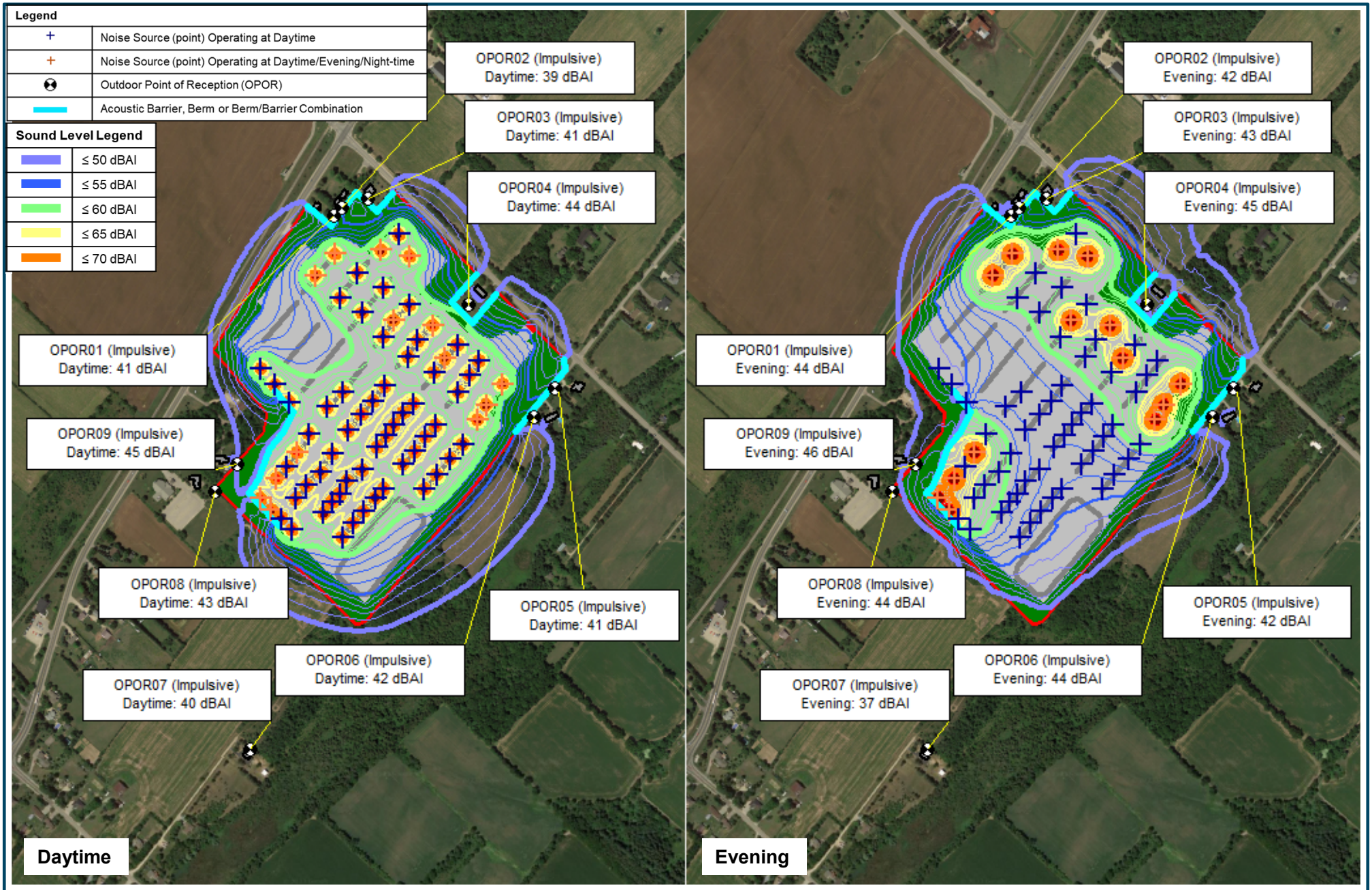
Date: April 2024

Rev 0.0

Project No. 241.031181.00000

Figure No. **14**

SLR



ERAMOSA FARMS LTD.

8075 HIGHWAY 7 – GUELPH ERAMOSA, ONTARIO

MODELLED STATIONARY NOISE IMPACTS OPOR – IMPULSIVE SOURCES – WORST-CASE HOUR – MITIGATED

True North

Scale: 1:10,000 METRES

Date: April 2024 Rev 0.0

Project No. 241.031181.00000

Figure No. **15**

SLR

Appendix A Preliminary Concept Plan

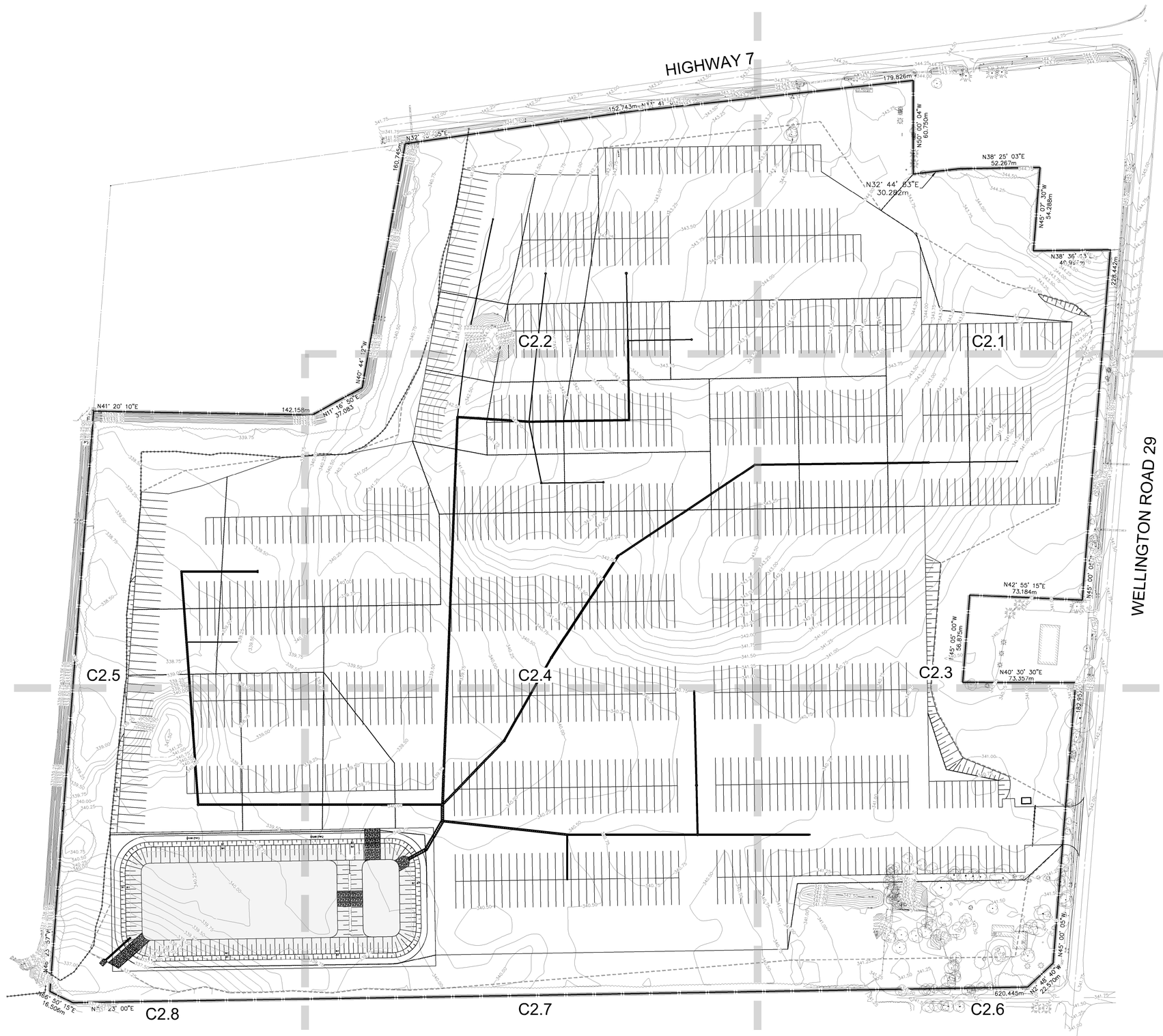
Compatibility Mitigation Study, Air Quality and Environmental Noise

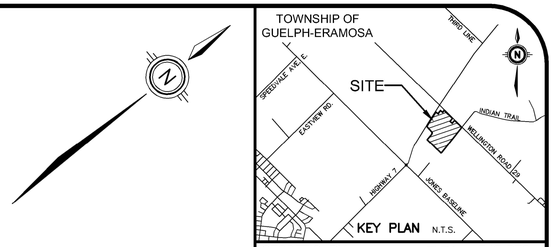
8075 Highway 7 – Guelph Eramosa

Eramosa Farms Ltd.

SLR Project No.: 241.031181.00001

May 14, 2024





GEODETIC BM ELEV. = 345.578m

COSINE STATION #00829178065
RIB WITH CAP – LOCATED ON THE NORTH SIDE OF HIGHWAY 7, 0.1km EAST OF WELLINGTON ROAD 29.

SITE BENCHMARK ELEV. = 343.823m

PIN SOUTH SIDE OF HIGHWAY 7 APPROXIMATELY 18m EAST OF ENTRANCE TO 8075 HIGHWAY 7.

NOTE TO CONTRACTOR :

DO NOT SCALE DRAWINGS.

CONTRACTORS MUST CHECK AND VERIFY ALL DIMENSIONS AND REPORT ANY DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.

ALL DRAWINGS REMAIN THE PROPERTY OF THE ENGINEER AND SHALL NOT BE REPRODUCED OR REUSED WITHOUT THE ENGINEER'S WRITTEN PERMISSION.

THE OWNER/ARCHITECT/CONTRACTOR IS ADVISED THAT M.T.E. CONSULTANTS INC. CANNOT CERTIFY ANY COMPONENT OF THE SITE WORKS NOT INSPECTED DURING CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO NOTIFY M.T.E. CONSULTANTS INC. PRIOR TO COMMENCEMENT OF CONSTRUCTION TO ARRANGE FOR INSPECTION.

NOTE:

1. **PROPERTY LINE IS APPROXIMATE ONLY AND SHOULD NOT BE USED FOR DETERMINING SETBACKS OR LAYOUT.**
2. **EXISTING TOPOGRAPHICAL INFORMATION PROVIDED BY MTE, DATED DECEMBER 19, 2023.**
3. **THIS PLAN IS PART OF A SET OF PLANS WHICH COMPRISE OF THE FOLLOWING: C1.0, C2.0, C2.1, C2.2, C2.3, C2.4, C2.5, C2.6, C2.7, C2.8**

LEGEND OF EXISTING FEATURES

- SITE BOUNDARY
- EXISTING CONTOURS (341.00)
- APPROXIMATE ENVIRONMENTAL PROTECTION ZONE LIMIT

LEGEND OF PROPOSED FEATURES

- DRAINAGE SPLIT (RIDGE)
- EMBANKMENT (SLOPE AS NOTED) (TOP) 3:1 (BOTTOM)
- LIMIT OF GRADING

No.	REVISION	BY	YYYY-MM-DD
8.			
7.			
6.			
5.			
4.			
3.			
2.			
1.			

MTE
Engineers, Scientists, Surveyors
519-743-6500

CLIENT
ERAMOSA FARMS LTD.
ST. CLEMENTS

PROJECT
8075 HIGHWAY 7
GUELPH/ERAMOSA

DRAWING
KEY PLAN

Project Manager: A.TCHOUMATCHEV	Project No.: 54565-100
Design By: MLW	Checked By: CVP
Drawn By: TXT/GLC	Checked By: MLW
Surveyed By: MTE	Drawing No.: C2.0
Date: Mar.14/24	
Scale: 1:1250	Sheet 2 of 10

MTE FILE PATH: P:\P\54565\100\54565-100-C2

April 16, 2024 – 12:05:45 PM – Plotted By: Gemma Cabral-Gushue

Appendix B Stationary Noise Modelling Inputs

Compatibility Mitigation Study, Air Quality and Environmental Noise

8075 Highway 7 – Guelph Eramosa

Eramosa Farms Ltd.

SLR Project No.: 241.031181.00001

May 14, 2024

Sabah Ersum

From: Patrick Neal <pneal@ptsl.com>
Sent: March 04, 2024 9:49 AM
To: Sabah Ersum; Richard Parent
Cc: Stefan Gopaul; Trevor Hawkins; Aaron Haniff; thawkins@mhbplan.com; Rajan Philips
Subject: RE: (230251) 8075 Highway 7, Guelph-Eramosa TIB - Truck Traffic Estimates

Follow Up Flag: Flag for follow up
Flag Status: Flagged

Hi Sabah,

Please see the below table for the estimated truck volumes, and please note the following:

- The AM and PM peak hour trip estimates are based on proxy site data, as detailed in the Transportation Impact Brief.
- The existing 11-hour total for Highway 7 indicates 25% of the truck traffic travels through the intersection during either the AM or PM peak hour, and the remaining 75% during the off-peak hours. The only traffic data available was an 11-hour recording completed by MTO, which captured the AM and PM peak hours.
- We equally distributed the off-peak hour traffic as an hourly average.
- We estimated the nighttime average hourly total as 50% of the daytime off-peak hourly average.
- The calculations are detailed in the bottom section of the table.

Time	Two-Way Truck Traffic				
	Highway 7		Wellington Road 29		
	East Leg	West Leg	North Leg	South Leg	Notes:
7:00 - 8:00 AM	8	5	0	13	Average Hourly Off-Peak
8:00 - 9:00 AM	4	2	0	6	Estimated Truck Traffic -
9:00 - 10:00 AM	8	5	0	13	Average Hourly Off-Peak
10:00 - 11:00 AM	8	5	0	13	Average Hourly Off-Peak
11:00 AM - 12:00 PM	8	5	0	13	Average Hourly Off-Peak
12:00 - 1:00 PM	8	5	0	13	Average Hourly Off-Peak
1:00 - 2:00 PM	8	5	0	13	Average Hourly Off-Peak
2:00 - 3:00 PM	8	5	0	13	Average Hourly Off-Peak
3:00 - 4:00 PM	8	5	0	13	Average Hourly Off-Peak
4:00 - 5:00 PM	20	14	0	34	Estimated Truck Traffic -
5:00 - 6:00 PM	8	5	0	13	Average Hourly Off-Peak
Average Hourly Nighttime (6:00 PM - 7:00 AM)	4	3	0	7	Average Hourly Truck Tra
AM + PM Peak Hour	24	16	0	40	Estimated peak hour tota
9-Hour Total (3 times the AM + PM)	72	48	0	120	9-hour off-peak hour total
Off-Peak Hour Average (9-Hour Total divided by 9)	8	5	0	13	Average off-peak hour da
Nighttime Average (50% Daytime Off-Peak)	4	3	0	7	Nighttime average hourly
Daytime Total	96	64	0	160	
Nighttime Total	52	39	0	91	
Daily 24-Hour Total	***148***	***103***	***0***	***251***	

Please let us know if you have any questions.

Regards,

Patrick Neal, EIT
Transportation Consultant

Paradigm Transportation Solutions Limited
p: 416.479.9684 x510
m: 416.688.7338

From: Rajan Philips <rphilips@ptsl.com>
Sent: Friday, March 1, 2024 8:45 AM
To: Sabah Ersum <sersum@slrconsulting.com>; Richard Parent <RParent@abarchitect.ca>
Cc: Patrick Neal <pneal@ptsl.com>; Stefan Gopaul <sgopaul@slrconsulting.com>; Trevor Hawkins <thawkins@mhbcplan.com>; Aaron Haniff <ahaniff@slrconsulting.com>; thawkins@mhbplan.com
Subject: RE: (230251) 8075 Highway 7, Guelph-Eramosa TIB - Truck Traffic Estimates

Hi Sabah,

We will have the truck volumes for you on Monday morning.

Regards,

Rajan Philips, M.Sc. (PI), P.Eng.
Senior Transportation Consultant

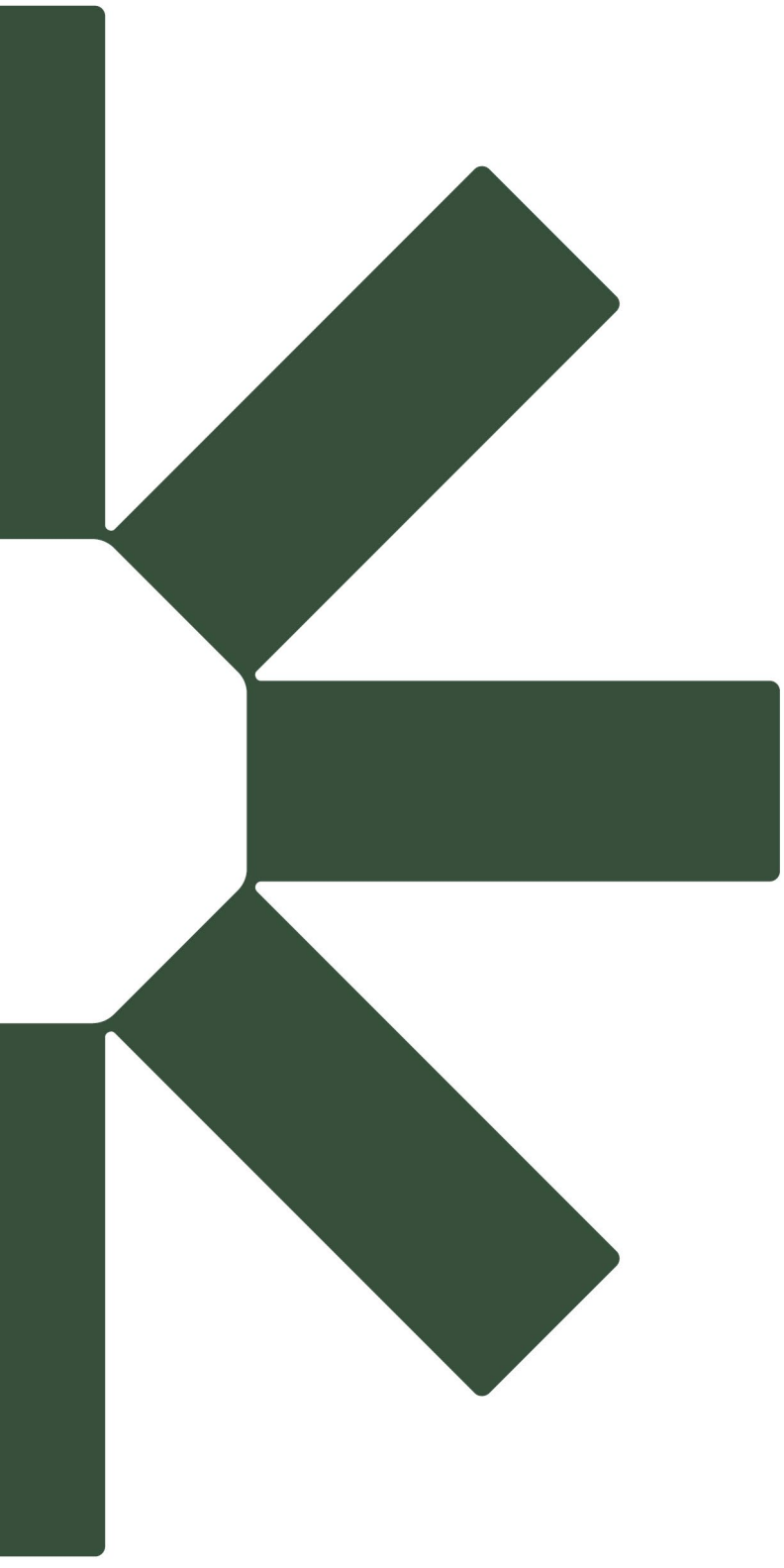
Paradigm Transportation Solutions Limited
5A-150 Pinebush Road, Cambridge ON N1R 8J8
p: 519.896.3163 x207
e: rphilips@ptsl.com
w: www.ptsl.com

Office Hours: 07:30 – 17:30 M-T, closed Fridays

From: Sabah Ersum <sersum@slrconsulting.com>
Sent: Thursday, February 29, 2024 12:03 PM
To: Richard Parent <RParent@abarchitect.ca>
Cc: Rajan Philips <rphilips@ptsl.com>; Patrick Neal <pneal@ptsl.com>; Stefan Gopaul <sgopaul@slrconsulting.com>; Trevor Hawkins <thawkins@mhbcplan.com>; Aaron Haniff <ahaniff@slrconsulting.com>; thawkins@mhbplan.com
Subject: RE: (230251) 8075 Highway 7, Guelph-Eramosa TIB - Truck Traffic Estimates

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

Source Description	ID	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)		
Heavy Truck Idling	HeavyTruckIdle	19	93	88	83	90	87	88	82	71	93	- Based on SLR historical data - Assumed to operate 5 minutes per hour per truck for each truck entering/leaving facility during all times of the day
Heavy Truck - Passby	HeavyTruckPassby	98	101	101	97	96	96	92	84	78	100	- Based on SLR historical data - 68 truck per hour during daytime, 14 trucks per hour during evening and night-time - Assumed speed of 10 km/hour
Slow Tractor Trailer Coupling	Trailer_loading_imp	103	105	109	108	109	105	100	96	93	110	- Based on SLR historical data - Assumed 68 impulses per hour during daytime/evening, and 14 impulses per hour during night-time. -Sound power level normalized across 68 point sources during daytime/evening -Sound power level normalized across 14 point sources during night-time



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