Land Use Compatibility Study

317 County Road 4, Peterborough, Ontario

Leahy Excavations Inc.

9 April 2025

→ The Power of Commitment

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Executive Summary

GHD Limited (GHD) was retained by *Leahy Excavations Inc.* to prepare a Land Use Compatibility Study to support the Zoning By-law Amendment (ZBA) to permit the construction of the proposed shop, infiltration drain, and parking lot area additions to the industrial facility (Facility) at 317 County Road 4, Peterborough, Ontario (Site).

The existing Facility currently conducts material processing and recycling. After construction of the proposed shop building, the operations will remain the same. Operations of the Facility consist of the processing of vacuum slurry, aggregates, topsoil, and green waste into soil to be reused. Non-granular materials, generally described as higher in silt and clay content, are used for backfilling of the wayside pit area.

The purpose of this Study is to assess land use compatibility of the proposed Facility with respect to surrounding land uses in accordance with the Ministry of Environment, Conservation and Parks (MECP) D-series land use compatibility guidelines. This Study includes a summary of the existing land uses in the area surrounding the Site and assesses the potential for air quality, odour, dust, noise, and vibration compatibility issues.

As part of the Guideline D-6 review, this Study identifies sensitive uses within the recommended setback distance of the Facility that warrant further assessment with respect to dust and stationary noise. Air quality, odour, and vibration impacts from the Facility are insignificant and are not expected to impact the surrounding sensitive uses based on GHD's review of the Facility's operations.

A justifying impact statement for dust impacts and a detailed noise assessment of the Facility's noise impacts on these sensitive uses is included in this Study. The Facility is anticipated to be compatible with the surrounding sensitive uses, provided that the mitigation measures recommended in this Study are implemented.

This report is subject to, and must be read in conjunction with, the limitations set out in section 1.2 and the assumptions and qualifications contained throughout the Report.

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1. Introduction

1.1 Purpose of this Report

GHD Limited (GHD) was retained by *Leahy Excavations Inc.* to prepare a Land Use Compatibility Study to support the Zoning By-law Amendment (ZBA) application to permit the construction of the proposed shop, infiltration drain, and parking lot area additions to the industrial facility (Facility) at 317 County Road 4, Peterborough, Ontario (Site).

1.2 Scope and Limitations

This report: has been prepared by GHD for Leahy Excavations Inc. and may only be used and relied on by Leahy Excavations Inc. for the purpose agreed between GHD and Leahy Excavations Inc. as set out in section 1.1 of this report.

GHD otherwise disclaims responsibility to any person other than Leahy Excavations Inc. arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report. GHD disclaims liability arising from any of the assumptions being incorrect.

2. Site and Facility Description

The Site is located between Douro Ninth Line and Douro Eighth Line and directly off County Road 4. A key plan is included as Figure 2.1, which shows the location of the Site in relation to these transportation corridors.

The Site is currently zoned as Special District 194 Zone (S.D. 194). The lands surrounding the Site include properties zoned as Rural (RU) on all sides, Environmental Conservation (EC) to the north and south, and Extractive Industrial (M2), Special District 106 (S.D. 106), and Special District 258 (S.D. 258) to the south. A zoning map is included in Figure A.1 of Appendix A.

The area surrounding the Site includes significant terrain elevation changes, and the proposed Facility building will obstruct the line of sight from the nearby sensitive uses to some of the facility operations. The site plan for the Facility is included at the end of Appendix A.

The property currently consists of a material processing and recycling facility. After construction of the proposed storage building, the operations will remain the same. Operations of the Facility consist of the processing of vacuum slurry, aggregates, topsoil, and green waste into soil to be reused. Non-granular materials, generally described as higher in silt and clay content, are used for backfilling of the wayside pit area.

3. Facility Compatibility Considerations

3.1 Provincial Planning Statement

The Provincial Planning Statement ("PPS") is a consolidated statement of the provincial government's policies on land use planning. It "provides policy direction on matters of provincial interest related to land use planning and development. As a key part of Ontario's policy-led planning system, the Provincial Planning Statement sets the policy foundation for regulating the development and use of land province-wide, helping achieve the provincial goal of meeting the needs of a fast-growing province while enhancing the quality of life for all Ontarians."

The current PPS became effective on October 20, 2024. Policy direction concerning land use compatibility is provided in Section 3.5 of the PPS:

> "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.
>
> 2. Where avoidance is not possible in accordance with policy 3.5.1, planning authorities shall protect the long-term viability of existing or planned industrial, manufacturing or other major facilities that are vulnerable to encroachment by ensuring that the planning and development of proposed adjacent sensitive land uses is only permitted if potential adverse effects to the proposed sensitive land use are minimized and mitigated, and potential impacts to industrial, manufacturing or other major facilities are minimized and mitigated in accordance with provincial guidelines, standards and procedures."

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.

3.2 Guideline D-6

The MECP Guideline D-6 "Compatibility Between Industrial Facilities and Sensitive Land Uses" (Guideline D-6) provides recommended minimum separation distances (RMSD) and potential areas of influence (AOI) based on the class of the industrial facility. RMSDs are provided based on the industry size and operation type. The guideline provides direction for land use planning to maximize compatibility of industrial uses with adjacent land uses. The goal of Guideline D-6 is to minimize encroachment of sensitive land uses on industrial facilities and vice versa, in order to address potential incompatibility due to adverse effects including air quality, dust, odour, noise, and vibration.

Guideline D-6 separates industries into three broad categories, depending on the nature of their operations and the types of potential impacts:

- **Class I industries** are small scale, self-contained plants or buildings, which produce and store products internally, and have low probability of fugitive emissions. They have daytime operations only, with infrequent movements of products and/or heavy trucks. Some examples include furniture repair and refinishing, electronics manufacturing, auto parts supply, distribution of dairy products, and beverages bottling.
- **Class II industries** perform medium scale processing, with occasional outputs of point source or fugitive emissions. Activities may include some outdoor storage of wastes and materials, frequent movement of products and/or heavy trucks during the daytime, and shift work. Some examples include paint spray booths, feed packing plant, dairy product manufacturing, and dry-cleaning services.
- **Class III industries** conduct large-scale manufacturing and are characterized by persistent and/or intense dust and/or odour, frequent outputs of major annoyances, and have a high probability of fugitive emissions. Activities may include continuous operations and movements of products, outside storage of raw and finished goods, and high levels of production. Some examples include manufacturing of paint and varnish, manufacturing of resins and coatings, solvent recovery plants, organic chemicals manufacturing, breweries, and metal manufacturing.

The following table summarizes the recommended minimum setback distances and areas of potential influence which represent the distances within which adverse effects could potentially occur.

Table 3.1 Guideline D-6 Industry Separation Distances

Industry Classification	RMSD (metres)	AOI (metres)
Class I	20	70
Class II	70	300
Class III	300	1,000

Guideline D-6 provides criteria for classifying industrial land uses, based on their outputs, scale of operations, processes, schedule, and intensity of operations. Often an industry will fall between two Classes. Guideline D-6 states that no incompatible development should occur within the recommended minimum separation distance as noted in Table 3.1. In cases where the recommended minimum separation distances are not met, further detailed assessment is warranted to ensure compatibility as stated in guideline D-6.

3.3 Guideline D-6 Assessment Conclusions

3.3.1 Facility Classification

Under Guideline D-6, and after reviewing the Facility operations, the Facility would be best described as a Class III industry based on the following:

– Open process
– Outside storage of raw materials
– Large-scale operations
– Frequent outputs of major annoyances (particularly noise and dust)
– Continuous movement of heavy trucks

Class III industries have an RMSD of 300 metres and an AOI of 1,000 meters under the D-6 compatibility guidelines. The Facility is less than 20 metres from the nearest sensitive use, which is within the RMSD setback distance, and therefore requires a justifying impact statement to further assess compatibility per Guideline D-6.

Based on the D-6 classification noted above for the Facility (see Figure 3.1), GHD has identified the worst-case sensitive land uses that lie within the recommended minimum setback distances and require further assessment:

– 312 County Road 4
– 374 County Road 4
– 194 Douro Eighth Line
– 162 Douro Eighth Line

Section 4.10.3 of the D-6 Guideline allows the proponent to provide a justifying impact assessment to support an application for a change in land use where the minimum distances are not met. A justifying impact statement is included for dust, and a detailed stationary noise impact assessment is included in Section 4.3 of this report to satisfy this requirement. Odour impacts from the Facility were deemed insignificant based on the details of the Design and Operations Report for the Facility, dated May 24, 2024, which states that hydrovac truck loads that may be impacted with contaminants (e.g., petroleum hydrocarbons as determined by Site information, visual inspection, and odours) are not accepted on the Site. Therefore, since all potentially odorous material is rejected at the Site, odour impacts are not anticipated. Other types of emissions are not considered significant, and do not warrant further assessment

3.3.2 Potential Future Sensitive Uses in the Area

GHD is of the opinion that the proposed Facility will not significantly affect the land use compatibility of any future sensitive uses on nearby lands, as there are existing sensitive residential land uses adjacent to the Facility with similar

exposure and line of sight. Therefore, it is GHD's opinion that any future residential developments on these nearby vacant lands should be able to reasonably comply with applicable environmental standards at adjacent sensitive uses and be compatible with the proposed Facility consequently.

4. Justifying Impact Assessments

To support the justifying impact assessments GHD reviewed the Design and Operations Report for the Facility dated May 24, 2024. The information in the Design and Operations Report includes specific mitigation measures and monitoring practices to ensure that potential emissions from the Facility are appropriately contained to reduce impacts on the surrounding sensitive uses.

4.1 Dust

Based on GHD's field observations and review of aerial imagery, there are potentially significant sources of dust emissions on the Site. Nuisance dust emissions may occur due to on-site traffic on unpaved areas, from stockpiles, and soil processing areas.

Ontario Regulation 419/05 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.

Facility staff have confirmed that daily visual inspections are conducted at the Facility to ensure that there are no off-site dust impacts. If the inspection identifies any visible dust or airborne particulate matter, the Facility has a list of mitigation measures that are implemented to correct this. The Facility operates with the following dust control measures: watering of unpaved areas, altering stockpile orientation in relation to prevalent wind directions and a low on-site speed limits are all implemented as required to manage dust. GHD understands that there have been no dust complaints from the surrounding sensitive uses as of the date of this Study; however, due to the proximity to surrounding sensitive uses, GHD recommends the implementation of a Best Management Practice Plan (BMPP) to formalize the Site mitigation measures and ensure that proper care is taken when dealing with dust emissions from the Facility in accordance with the MECP's Technical Bulletin: Management Approaches for Industrial Fugitive Dust Sources.

In accordance with the MECP's Technical Bulletin: Management Approaches for Industrial Fugitive Dust Sources, a dust BMPP should include the following elements:

Plan:

- Identify and characterize the sources of fugitive dust emissions within the facility.
- Identify nearby potential receptors that may be impacted by dust emissions.
- Develop a site map and/or figures to identify the locations of fugitive dust sources (such as storage piles and roadways) and potential receptors.
- Characterize applicable fugitive dust monitoring parameters such as silt loading, silt content, moisture content, metal content, dust fall, etc.
- Review the composition and particle size distribution of fugitive dust generated by each significant fugitive dust source where available.
- Identify the contributing factors for each significant source that favour the generation of fugitive dust emissions (e.g. predominant wind direction, location of storage pile, frequency of activity, process operating parameters, control efficiency, etc.).
- Prioritize the use of resources based on the relative contributions of fugitive dust sources.
- Describe how fugitive dust will be controlled from each significant source (e.g. the application of dust suppressants such as water or chemical suppressants).

Do:

- Document how the control measures will be implemented with timelines (e.g. frequency of road cleaning or water application, etc.).
- Describe proper operating, monitoring, sampling, record-keeping and best practice procedures of control and monitoring equipment (e.g. how to minimize drop height, etc.).
- Include a program for site-wide training for facility personnel and contractors.

Check:

- Implement a regular inspection, maintenance and calibration program (e.g. visual inspections of storage piles, maintenance of water sprays, etc.).
- Describe methods of reviewing information collected from inspections, monitoring, sampling and record-keeping to verify, and document ongoing implementation of the plan and to determine when to take additional action, if needed.

Act:

- Periodically review the effectiveness of control measures using available data from site inspections, silt loading and silt content analysis, dust fall jars, etc. on a regular basis to identify opportunities for continuous improvement.
- Update the BMPP as required.

GHD is of the opinion that, with the implementation of the Dust BMPP to formalize the Site mitigation measures, the Site will demonstrate an ongoing commitment to comply with the MECP requirements for dust control. As such, the Dust BMPP will support the compatibility of the Facility with respect to dust impacts.

4.2 Noise

Based on GHD's review of the Design and Operations Report, correspondence with the Owner, review of aerial imagery, and field observations, the Facility includes loaders, dozers, excavators, hydraulic breakers, a screener with stacker, and on-site haul trucks. The worst-case operations at the site can have the following equipment operating simultaneously:

- 1x screener
- 1x stacker
- 1x loader
- 1x excavator
- 1x dozer
- 2x heavy trucks idling

The owner has confirmed that rock breakers operate infrequently (less than twice per month), therefore they are excluded from the assessment of predictable worst-case hour operations in accordance with NPC-300.

The Facility typically operates from 6:00 am to 7:30 pm but has the potential to operate 24 hours per day, 7 days per week with reduced operations occurring after 7:30 pm to accommodate urgent requests from customers loading/unloading via vacuum trucks. As such, GHD also has considered noise impacts from vacuum truck operations after typical operating hours.

4.2.1 Stationary Noise Limits

4.2.1.1 MECP Standard Limits

NPC-300 defines stationary noise sources as sound from all sources that are normally operated within the property lines of a facility. The noise impact from stationary sources is evaluated based on operations during a predictable worst-case hour. Stationary noise assessment criteria are generally determined based on the MECP's minimum

exclusionary sound level limits, as presented in NPC-300, in comparison to the background sound levels experienced in the area.

The Site is in what would generally be considered a Class 3 acoustic environment as defined by NPC-300, as a rural area that is dominated by natural sounds having little or no road traffic.

Table 4.1 below summarizes the MECP's minimum exclusionary sound level limits for Class 3 areas, which are expressed in terms of 1-hour equivalent sound levels (1-hour Leq):

Table 4.1 MECP Minimum Exclusionary Sound Level Limits for Steady Sound – Class 3 Area

Point of Reception Type	Sound Level Limits (dBA)		
	Day (7am – 7pm)	Evening (7pm – 11pm)	Night (11pm – 7am)
Plane of window	45	40	40
Outdoor space	45	40	--

4.2.1.2 Background Sound Levels

GHD conducted a background sound level assessment to evaluate the existing background noise due to road traffic on County Road 4. Background noise was modelled in CadnaA, which was set to predict noise emission rates in accordance with the United States of America's (US) Department of Transportation's Traffic Noise Model (TNM). These noise emissions were validated with STAMSON, the MECP's computerized model of the Ontario Road Noise Analysis Method for Environment and Transportation (ORNAMENT). To demonstrate that the model is generally consistent with the STAMSON model that is the standard in Ontario, a sample STAMSON calculation is included in Appendix D representing the south façade of 312 County Road 4 (POR-01a). The prediction results are within ± 1 dBA of the CadnaA noise predictions, indicating that the CadnaA model is consistent with STAMSON.

The applicable noise criteria at a point of reception are based on the higher of the background sound level and the MECP's minimum sound level limits, as noted in Section 4.4.1.1.

The computer model input parameters include, among other data, the number of road segments, number of house rows, the positional relationship of the receptor to a noise source or barrier in terms of distance, elevation and angle, the basic site topography, the ground surface type, traffic volumes, traffic composition, and speed limit.

Hourly traffic counts from 2025 for County Road 4 were obtained from traffic monitoring done by Ontario Traffic Incorporated (OTI). These counts were used to determine the minimum hourly count during the day, evening, and night periods and the raw data is included in Appendix B.

Table 4.2 Background Road Traffic Parameters

Road Segment	Time Period	Minimum Hourly Daytime Vehicles	Commercial Vehicle Rates (medium trucks / heavy trucks)
County Road 4	Day (7:00 am to 7:00 pm)	72	2.8% / 2.8%
	Early Evening (7:00 pm to 8:00 pm)	121	1.7% / 1.7%
	Evening (8:00 pm to 11:00 pm)	44	0% / 0%
	Early Morning (6:00 am to 7:00 am)	54	0% / 0%

The above road traffic data was used to calculate background sound levels at the façades and outdoor points of reception of the Facility using the detailed model methodology described in above. Predicted noise levels exceed the minimum Class 3 exclusionary limits at the worst-case PORs. The lowest sound levels generally occur at the ground floor level (1.5 metres above grade) and increase with height due to increased line of sight exposure to the roadways.

Where the predicted background sound level due to road traffic exceeds the corresponding minimum exclusionary sound level limit of NPC-300 (see Table 4.1), the background sound level is instead used as the criteria for

assessment of stationary noise impacts. The applicable site-specific sound level limits for the Development are summarized as follows:

Table 4.3 Applicable MECP Sound Level Limits for Steady Sound

POR ID	POR Description	Sound Level Limits (dBA)			
		Day (7am – 7pm)	Eve. Period #1 (7pm – 7:30pm)	Eve. Period #2 (7:30pm – 11pm)	Night (6am – 7am)
POR-01a	312 County Road 4 - Residential dwelling worst-case plane of window on south façade, 2nd floor (4.5 metres above grade [m AG])	45	47	41	42
POR-01b	312 County Road 4 - Worst-case front yard receptor (1.5 metres above grade m AG)	47	48	43	--
POR-02a	374 County Road 4 - Residential dwelling worst-case plane of window on south façade, 1st floor (1.5 metres above grade m AG)	50	52	46	47
POR-02b	374 County Road 4 - Worst-case front yard receptor (1.5 metres above grade m AG)	61	63	57	--
POR-03a	194 Douro Eighth Line - Residential dwelling worst-case plane of window on west façade, 1st floor (1.5 metres above grade [m AG])	45	40	40	40
POR-03b	194 Douro Eighth Line - Worst-case backyard receptor (1.5 metres above grade m AG)	45	40	40	--
POR-04a	162 Douro Eighth Line - Residential dwelling worst-case plane of window on west façade, 2nd floor (4.5 metres above grade m AG)	45	40	40	40
POR-04b	162 Douro Eighth Line - Worst-case backyard receptor (1.5 metres above grade m AG)	45	40	40	--

The applicable guideline sound level limits for regular scheduled testing of emergency equipment (e.g., standby generator) are 5 dBA higher than the corresponding values above.

4.2.2 Methodology

Detailed assessment of noise impacts from the Facility has been carried out using CadnaA version 2024 MR1 (CadnaA). CadnaA is the industry standard for noise modelling of industrial and commercial facilities and is based on ISO standard 9613-2 “Acoustics – Attenuation of Sound during Propagation Outdoors”. CadnaA modelling assumptions used in this Study include:

– Reflection Order: A maximum reflection order of 2 was used to evaluate indirect noise impact from reflecting surfaces.
– Ground Absorption: The model was set up with conservative ground absorption coefficients of 0.25 for asphalt surfaces, 0.5 for gravel, and 1.0 for absorptive areas of grass.
– Receptor Elevation: POR receptor heights were modelled appropriately based on an assumed storey height of 3 m.
– Tonality: No tonal sources were identified.
– Building Surfaces: The buildings are modelled as reflective surfaces.

– Topography: The topography for the area surrounding the Site was obtained from the most recent OMAFRA Lidar Lake Erie Data. Due to the pit fill process, the on-site topography was assumed based on a worst-case scenario which occurs when the pit grade is level with the proposed parking area grading.

4.2.3 Points of Reception

The identification of appropriate sensitive point(s) of reception (POR) is necessary to conduct the noise impact analysis. A "point of reception" is any point on the premises of a person where sound, originating from other than those premises, is received. The point of reception may be located on permanent or seasonal residences, nursing/retirement homes, rental residences, hospitals, campgrounds, schools, or places of worship.

The objective of this Study is to determine the predictable worst case 1-hour equivalent sound level (1-hour Leq) at the existing and proposed worst case POR(s). The worst-case POR(s) are defined as the sensitive receptors with the greatest potential exposure to the Facility noise sources due to proximity and direct line of sight exposure. GHD notes that a review of the surrounding area determined that there are no vacant lot receptors warranting assessment. The worst-case sensitive POR(s) are:

– POR-01a – 312 County Road 4 - Residential dwelling worst-case plane of window on south façade, 2nd floor (4.5 metres above grade [m AG])
– POR-01b – 312 County Road 4 - Worst-case front yard receptor (1.5 metres above grade m AG)
– POR-02a – 374 County Road 4 - Residential dwelling worst-case plane of window on south façade, 1st floor (1.5 metres above grade m AG)
– POR-02b – 374 County Road 4 - Worst-case front yard receptor (1.5 metres above grade m AG)
– POR-03a – 194 Douro Eighth Line - Residential dwelling worst-case plane of window on west façade, main floor (3 metres above grade m AG)
– POR-03b – 194 Douro Eighth Line - Worst-case backyard receptor (1.5 metres above grade m AG)
– POR-04a – 162 Douro Eighth Line - Residential dwelling worst-case plane of window on west façade, 2nd floor (4.5 metres above grade m AG)
– POR-04b – 162 Douro Eighth Line - Worst-case backyard receptor (1.5 metres above grade m AG)

The location of the worst-case POR(s) are identified on Figure 4.1.

4.2.4 Stationary Noise Sources

Stationary noise sources have been assessed using assumptions described in the sections that follow. Noise source locations are identified in Figures 4.2a, 4.2b, and 4.2c. Source sound level data, operating conditions, and heights are included in Table C.1 of Appendix C. Noise sources from standard operations operate from 6:30 am to 7:30 pm and non-standard operations were assumed to operate from 7:30 pm to 11:00 pm.

GHD also noted that there are no significant emergency noise sources or impulse noise sources at the Facility that would warrant assessment.

4.2.4.1 Heavy Trucks

A variety of heavy trucks are used at the facility for transporting material, including float trucks, small rigid haul trucks, and vacuum trucks. The estimated number of truck movements on-site was confirmed by Leahy Excavations Inc. to be four (4) trucks per hour during the worst-case hours of the day to facilitate the transportation of soil. Noise emissions associated with the truck movements were modelled using a single line source with emissions calculated based on sound level data for heavy truck movements published by the United States Federal Highway Administration.

The model assumes that two site-owned haul trucks idle, with one haul truck located at the weigh scale and the other located near the main operations of the facility, both operating continuously. These sources were modelled using representative sound data from GHD's past projects.

The model also assumes that a vacuum truck is loaded to accommodate non-standard operations at the facility (where customers can acquire soil material after typical work hours). This source was assumed to operate continuously during the worst-case evening hour at the main piles and not occur during the nighttime. This source was also modelled using representative sound data from GHD's past projects.

4.2.4.2 Loaders

A wheeled loader is frequently used at the Site to move soil material within the operating areas and to load haul trucks. This source was modelled using measured sound level data from the site visit conducted by GHD on January 29th, 2025. The model assumes that the loader will operate continuously during standard operations.

4.2.4.3 Dozers

A dozer is frequently used at the Site to push soil material and form piles in the operating areas. This source was modelled using representative sound data from GHD's past projects. The model assumes that the dozer will operate continuously during standard operations.

4.2.4.4 Excavators

An excavator is frequently used at the Site to move soil material around the operating areas, load material onto trucks, operate the hydraulic breaker (which attaches to the excavator), and to load the screener for soil processing. This source was modelled using measured sound level data from the site visit conducted by GHD on January 29th, 2025. The model assumes that the excavator will operate continuously during standard operations.

4.2.4.5 Screener and Stacker

A screener and stacker are used in combination at the north end of the Site to process soil and sort it into piles. These pieces of machinery are not moved from their present location and as such were modelled in this location for both standard operation scenarios. This source was modelled using representative sound data for a stacker and screener from GHD's past projects. The model assumes that the screener and stacker will operate continuously during standard operations.

4.2.5 Results

4.2.5.1 Unmitigated Results – Standard Operations

Using the 3D model described above, predicted noise levels at the worst-case PORs of the Facility are summarized as follows in terms of 1-hour Leq for both standard operating scenarios:

Table 4.4 Unmitigated Stationary Noise Prediction Results – Equipment Operating at North End

POR ID	Predicted Noise Level (dBA)				Sound Level Limit (dBA)				Limits Exceeded?
	Day	Eve. Period #1	Eve. Period #2	Night	Day	Eve. Period #1	Eve. Period #2	Night	
POR-01a	**50**	47	--	**50**	45	47	41	42	**Yes**
POR-01b	**48**	45	--	--	47	48	43	--	**Yes**
POR-02a	**57**	**54**	--	**57**	50	52	46	47	**Yes**
POR-02b	61	58	--	--	61	63	57	--	No
POR-03a	42	39	--	**42**	45	40	40	40	**Yes**
POR-03b	39	36	--	--	45	40	40	--	No
POR-04a	43	40	--	**43**	45	40	40	40	**Yes**
POR-04b	41	38	--	--	45	40	40	--	No

Table 4.5 Unmitigated Stationary Noise Prediction Results – Equipment Operating at South End

POR ID	Predicted Noise Level (dBA)				Sound Level Limit (dBA)				Limits Exceeded?
	Day	Eve. Period #1	Eve. Period #2	Night	Day	Eve. Period #1	Eve. Period #2	Night	
POR-01a	**52**	**49**	--	**52**	45	47	41	42	**Yes**
POR-01b	**52**	**49**	--	--	47	48	43	--	**Yes**
POR-02a	50	47	--	**50**	50	52	46	47	**Yes**
POR-02b	51	48	--	--	61	63	57	--	No
POR-03a	43	40	--	**43**	45	40	40	40	**Yes**
POR-03b	41	38	--	--	45	40	40	--	No
POR-04a	43	40	--	**43**	45	40	40	40	**Yes**
POR-04b	41	38	--	--	45	40	40	--	No

As seen above, predicted noise levels at the majority of worst-case PORs exceed the applicable sound level limits of NPC-300, and warrant mitigation. As such, the GHD recommends that the Facility incorporate the mitigation measures described in Section 4.4.6. Noise contour plots of the unmitigated steady noise results for standard operations are shown in Figure 4.3 and Figure 4.4.

4.2.5.2 Unmitigated Results – Non-Standard Operations

For the non-standard operations, predicted noise levels at the worst-case PORs of the Facility are summarized as follows in terms of 1-hour Leq:

Table 4.6 Stationary Noise Prediction Results – Vacuum Truck Loading During Evening

POR ID	Predicted Noise Level (dBA)	Sound Level Limit (dBA)	Limits Exceeded?
	Eve. Period #2	Eve. Period #2	
POR-01a	**49**	41	**Yes**
POR-01b	**48**	43	**Yes**
POR-02a	**52**	46	**Yes**
POR-02b	54	57	No
POR-03a	**41**	40	**Yes**
POR-03b	38	40	No
POR-04a	**41**	40	**Yes**
POR-04b	39	40	No

As seen above, predicted noise levels at the majority of the worst-case PORs surrounding the Facility exceed the applicable sound level limits of NPC-300, and warrant mitigation. As such, the GHD recommends that the Facility incorporate the mitigation measures described in Section 4.4.6. A noise contour plot of the unmitigated steady noise results for non-standard operations is shown in Figure 4.5.

4.2.6 Stationary Noise Mitigation

In order to comply with the sound level limits of NPC-300, GHD recommends that the following mitigation measures be implemented at the Site:

– Noise generated from standard operations during the nighttime are infeasible to mitigate, as such, GHD recommends that these operations be limited to 7 am – 7:30 pm.

– At times, trucks unloading material may sometimes allow the rear tailgate to fall or will shake the rear tailgate to loosen material, creating a banging noise. Administrative controls have been proposed to eliminate tailgate banging, including:
  - Signage posted at the Site to make it clear that tailgate banging is prohibited
  - Acknowledgement form to be signed by third-party truck operators
  - Enforcement on-site by Leahy Excavations Ltd. site management employees
– The following berms are recommended to be constructed surrounding the operating areas and maintained as the grade is raised during pit filling operations:
  - Berm 1: Berm top elevation of 225.1 m (approximately 11 metres tall); total length of 213 m to shield the residential dwelling and yard at 374 County Road 4 from the noise generated by Facility operations when equipment is located at the north end of the Site.
  - Berm 2: Berm top elevation of 229.0 m (approximately 15 metres tall); total length of 210 m to shield the residential dwelling and yard at 312 County Road 4 from the noise generated by Facility operations when equipment is located at the north end of the Site.
  - Berm 3: Berm top elevation of 228.0 m (approximately 15 metres tall); total length of 361 m to shield the residential dwelling and yard at 312 County Road 4 from the noise generated by Facility operations when equipment is located at the south end of the Site.
  - Berm 4: Berm top elevation of 222.0 m (approximately 9 metres tall); total length of 1109 m (encompassing the remainder of the Site) to shield the residential dwellings to the east from the noise generated by Facility operations.
– It should be noted that the construction of the berms will take a considerable amount of time, as procuring the necessary material to form the effective height will be completed as the pit is filled. According to the Owner, there have been no complaints of the current setup. As such, GHD recommends that, if a complaint is received during the period when the berms are still under construction, the Owner should consider focusing berm construction towards the affected area. This is to ensure that line of sight is blocked from the operating areas to the affected sensitive receptor on an as-needed basis during the transition.
– The recommended berm heights will change after the pit filling height is raised above the modelled scenario, 213 metres above sea level (MASL). Note that Berm 4 can remain the same height during this transition, as the final grading of the Site will not require Berm 4. The following table displays the recommended heights after the modelled scenario:

Table 4.7 Recommended Berm Heights from Modelled Scenario to Final Pit Fill Elevation

Height of Work Area - MASL	Top of Berm Elevation Over the Duration of Pit Filling Operations			
	Berm 1	Berm 2	Berm 3	Berm 4
213	228.0	228.0	225.1	222
214	228.6	228.5	225.7	222
214	229.2	229.0	226.3	222
216	229.8	229.5	226.9	222
217	230.4	230.0	227.5	222
218	231.0	230.5	228.1	222
219	231.6	231.0	228.7	222
220	232.2	231.5	229.3	222
221	232.8	232.0	229.9	222
222	233.4	232.5	230.5	--
223	234.0	233.0	231.1	--

4.2.6.1 Mitigated Results – Standard Operations

With the adjusted operating hours and installation of the recommended berms the Facility's operations will be compliant with the applicable limits of NPC-300. Noise contour plots of the mitigated steady noise results for standard operations are shown in Figure 4.6 and Figure 4.7. The noise results of this mitigation plan are shown below for both north and south standard operating scenarios (Table 4.7 and 4.8 respectively):

Table 4.8 Mitigated Stationary Noise Prediction Results Summary – Equipment Operating at North End

POR ID	Predicted Noise Level (dBA)				Sound Level Limit (dBA)				Limits Exceeded?
	Day	Eve. Period #1	Eve. Period #2	Night	Day	Eve. Period #1	Eve. Period #2	Night	
POR-01a	42	39	--	--	45	47	41	42	No
POR-01b	41	38	--	--	47	48	43	--	No
POR-02a	48	45	--	--	50	52	46	47	No
POR-02b	50	47	--	--	61	63	57	--	No
POR-03a	38	35	--	--	45	40	40	40	No
POR-03b	35	32	--	--	45	40	40	--	No
POR-04a	39	36	--	--	45	40	40	40	No
POR-04b	37	34	--	--	45	40	40	--	No

Table 4.9 Mitigated Stationary Noise Prediction Results Summary – Equipment Operating at South End

POR ID	Predicted Noise Level (dBA)				Sound Level Limit (dBA)				Limits Exceeded?
	Day	Eve. Period #1	Eve. Period #2	Night	Day	Eve. Period #1	Eve. Period #2	Night	
POR-01a	45	42	--	--	45	47	41	42	No
POR-01b	41	38	--	--	47	48	43	--	No
POR-02a	43	40	--	--	50	52	46	47	No
POR-02b	48	45	--	--	61	63	57	--	No
POR-03a	41	38	--	--	45	40	40	40	No
POR-03b	39	36	--	--	45	40	40	--	No
POR-04a	41	38	--	--	45	40	40	40	No
POR-04b	39	36	--	--	45	40	40	--	No

As seen above, predicted noise levels at the worst-case PORs surrounding the Facility are within the applicable sound level limits of NPC-300, after the installation of the recommended mitigation measures.

4.2.6.2 Mitigated Results – Non-Standard Operations

After implementation of the noise mitigation recommended in Section 4.2.6, the predicted noise levels at the worst-case PORs of the Facility for non-standard operations are summarized as follows in terms of 1-hour Leq:

Table 4.10 Stationary Noise Prediction Results Summary – Vacuum Truck Loading During Evening

POR ID	Predicted Noise Level (dBA)	Sound Level Limit (dBA)	Limits Exceeded?
	Eve. Period #2	Eve. Period #2	
POR-01a	40	41	No
POR-01b	38	43	No
POR-02a	46	46	No
POR-02b	47	57	No
POR-03a	37	40	No
POR-03b	34	40	No
POR-04a	37	40	No
POR-04b	35	40	No

As seen above, after the installation of the recommended berms, predicted noise levels at the worst-case PORs surrounding the Facility are within the applicable sound level limits of NPC-300 for non-standard operations. A noise contour plot of the mitigated steady noise results for non-standard operations is shown in Figure 4.8.

5. Conclusions

The Study concludes that, based on the Guideline D-6 assessment and supporting justifying impact assessments, the proposed Facility is feasible and will not impact the surrounding sensitive uses in terms of noise, vibration, air quality, odour, and dust emissions provided that the mitigation measures for dust are formalized in a dust BMPP and the noise mitigation measures detailed in this report are implemented. Therefore, it is GHD's opinion that the Facility is compatible with the existing and potential future sensitive uses surrounding the Site.

6. References

Ontario Ministry of Environment, Conservation and Parks (MECP, 1995), Guideline D-1: *Land Use Compatibility*

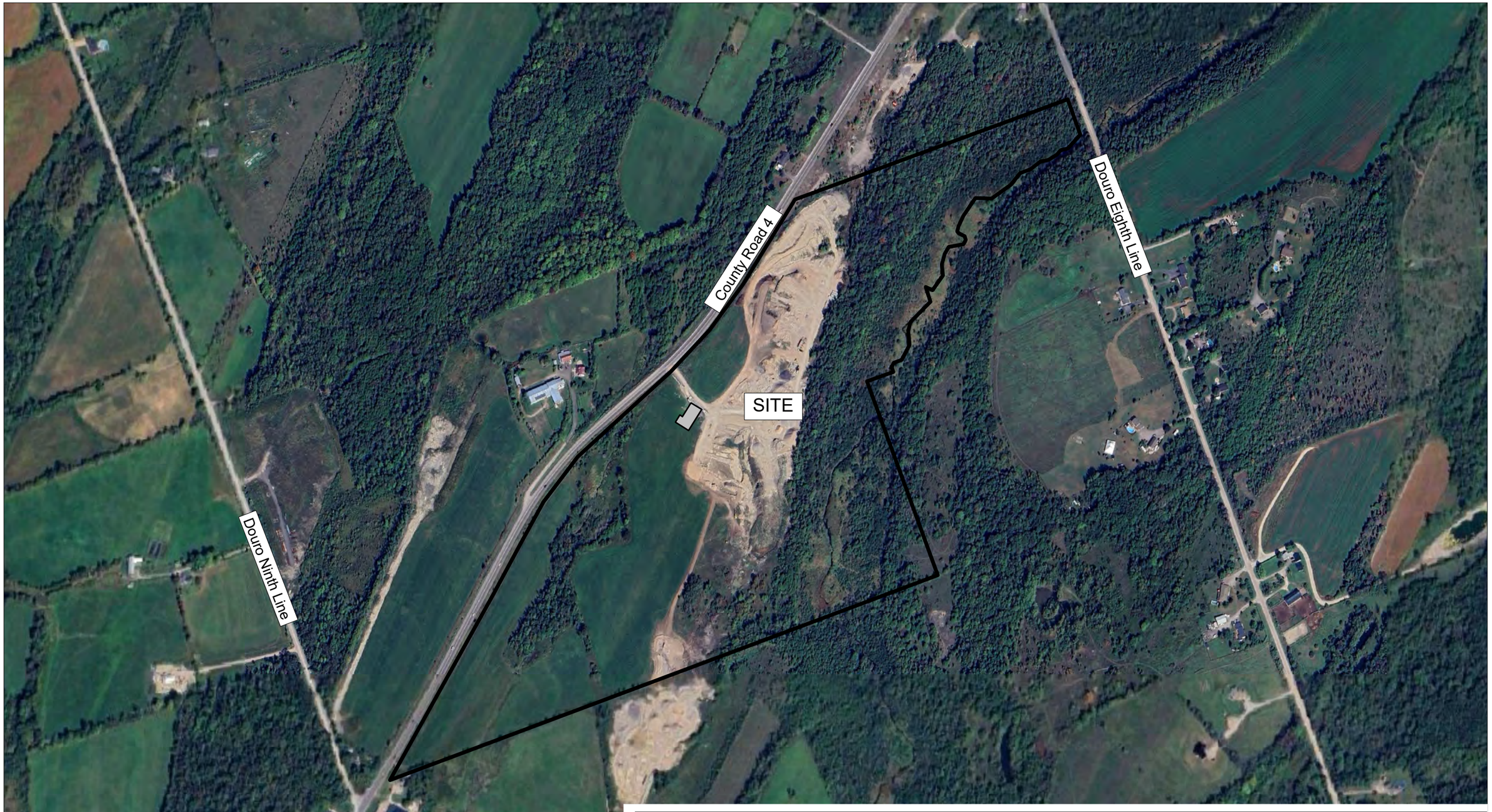
Ontario Ministry of Environment, Conservation and Parks (MECP, 1995), Guideline D-6: *Compatibility Between Industrial Facilities and Sensitive Land Uses*

Ontario Ministry of Environment, Conservation and Parks (MECP, 2013), Publication NPC-300: *Environmental Noise Guideline: Stationary and Transportation Sources – Approval and Planning*

Ontario Ministry of Environment, Conservation and Parks (MECP, 2013), Publication NPC-104: *Sound Level Adjustments*

Ontario Ministry of Environment, Conservation and Parks (MECP, 2021), Ontario Regulation 1/17: Environmental Activity and Sector Registry – Limits and other requirements for activities with air emissions

Ontario Ministry of Environment, Conservation and Parks (MECP, 2017), Technical Bulletin: Management Approaches for Industrial Fugitive Dust Sources



Paper Size ANSI B

0 50 100 150 200 250 m

Map Projection: Transverse Mercator
Horizontal Datum: North American 1983
Grid: NAD 83 UTM Zone 17N

N

GHD

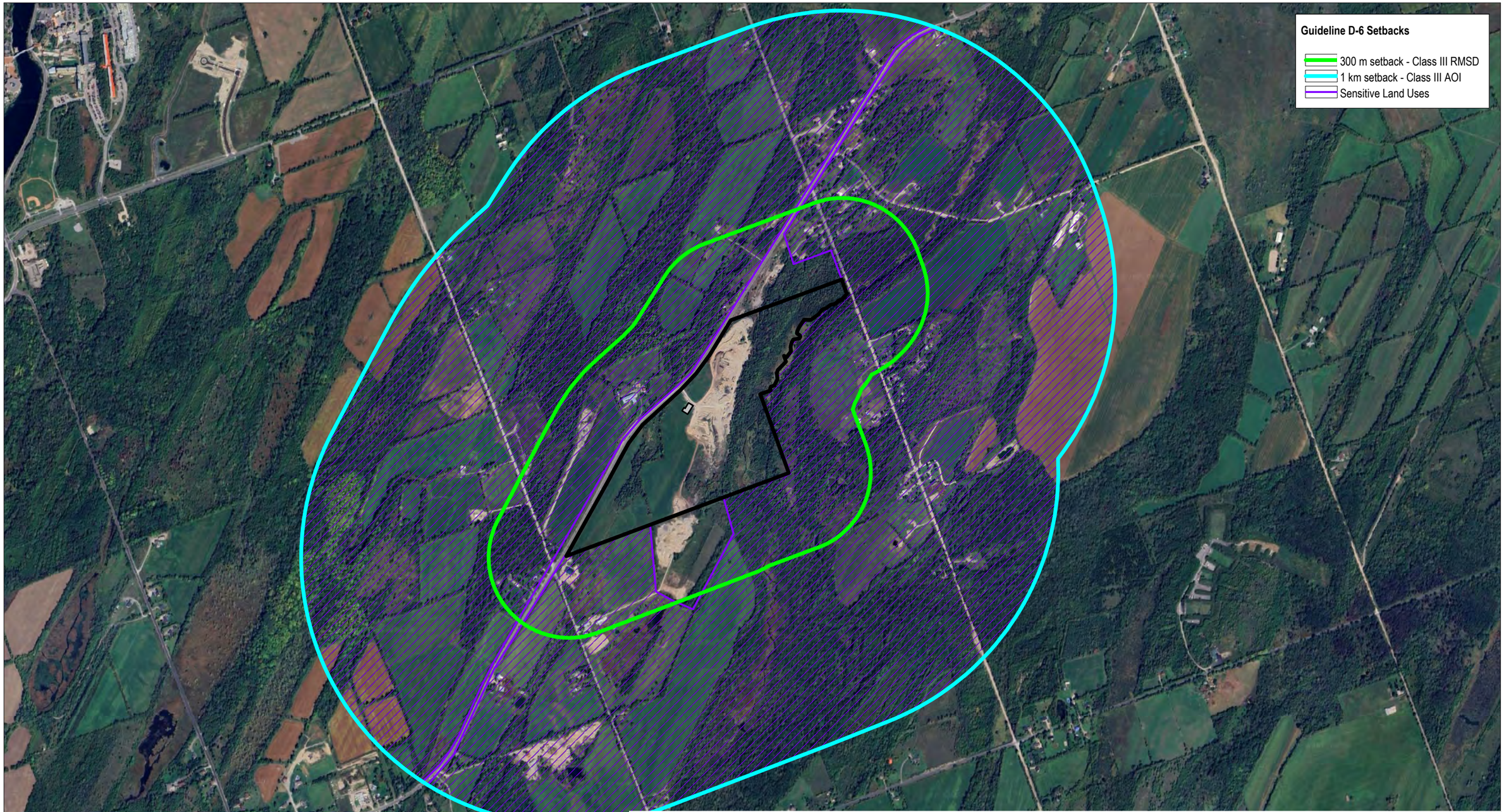
LAND USE COMPATIBILITY STUDY
LEAHY EXCAVATIONS INC.
317 COUNTY ROAD 4, PETERBOROUGH, ONTARIO

KEY PLAN

Project No. **12583956**
Revision No. **-**
Date **08.04.2025**

FIGURE 2.1

\\ghdnet\ghd\CA\Peterborough\Projects\662\12583956\Tech\Land Use Compatibility\CadnaA\12583956_LeahyExcavatingCountyRd4_V2025.04.cna
Imagery source: Google Satellite



Paper Size ANSI B

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Map Projection: Transverse Mercator
Horizontal Datum: North American 1983
Grid: NAD 83 UTM Zone 17N

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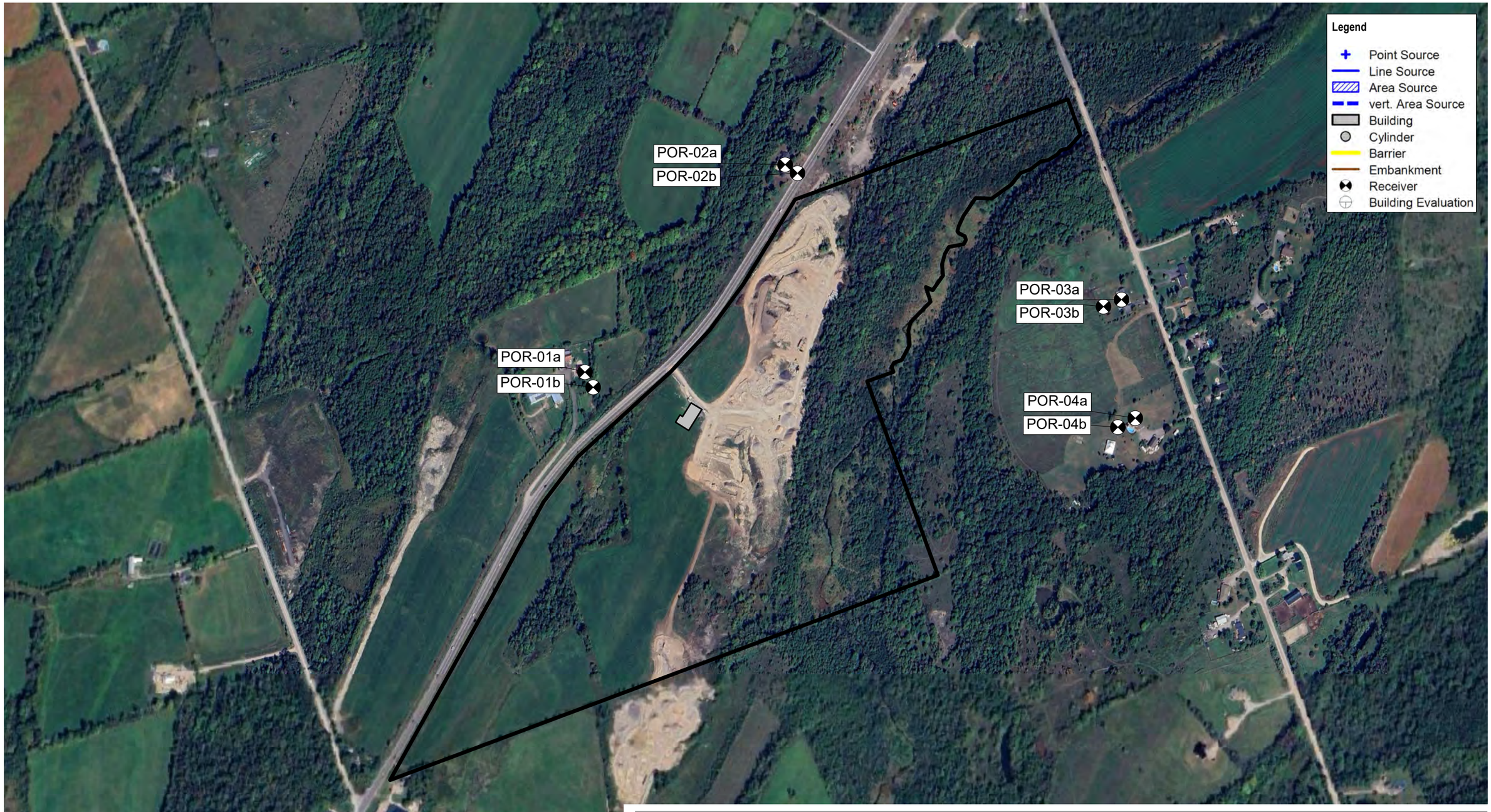
LAND USE COMPATIBILITY STUDY
LEAHY EXCAVATIONS INC.
317 COUNTY ROAD 4, PETERBOROUGH, ONTARIO

GUIDELINE D-6 SETBACKS

Project No. **12583956**
Revision No. **-**
Date **08.04.2025**

FIGURE 3.1

\\ghdnet\ghd\CA\Peterborough\Projects\662\12583956\Tech\Land Use Compatibility\CadnaA\12583956_LeahyExcavatingCountyRd4_V2025.04.cna
Imagery source: Google Satellite



Paper Size ANSI B

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Map Projection: Transverse Mercator
Horizontal Datum: North American 1983
Grid: NAD 83 UTM Zone 17N

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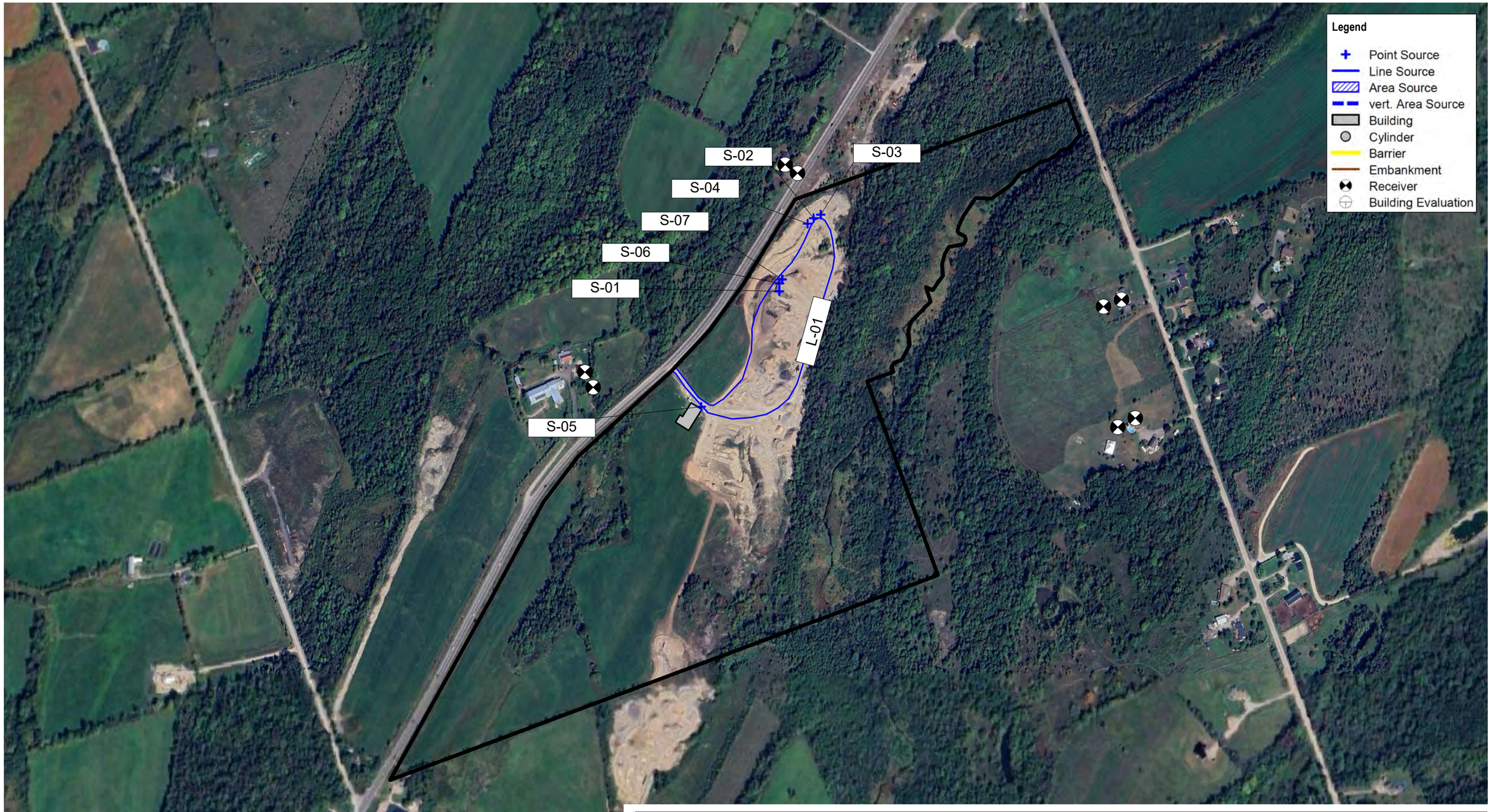
LAND USE COMPATIBILITY STUDY
LEAHY EXCAVATIONS INC.
317 COUNTY ROAD 4, PETERBOROUGH, ONTARIO

POR LOCATION PLAN

Project No. **12583956**
Revision No. **-**
Date **08.04.2025**

FIGURE 4.1

\\ghdnet\ghd\CA\Peterborough\Projects\662\12583956\Tech\Land Use Compatibility\CadnaA\12583956_LeahyExcavatingCountyRd4_V2025.04.cna
Imagery source: Google Satellite



Paper Size ANSI B

0 50 100 150 200 250 m

Map Projection: Transverse Mercator
Horizontal Datum: North American 1983
Grid: NAD 83 UTM Zone 17N

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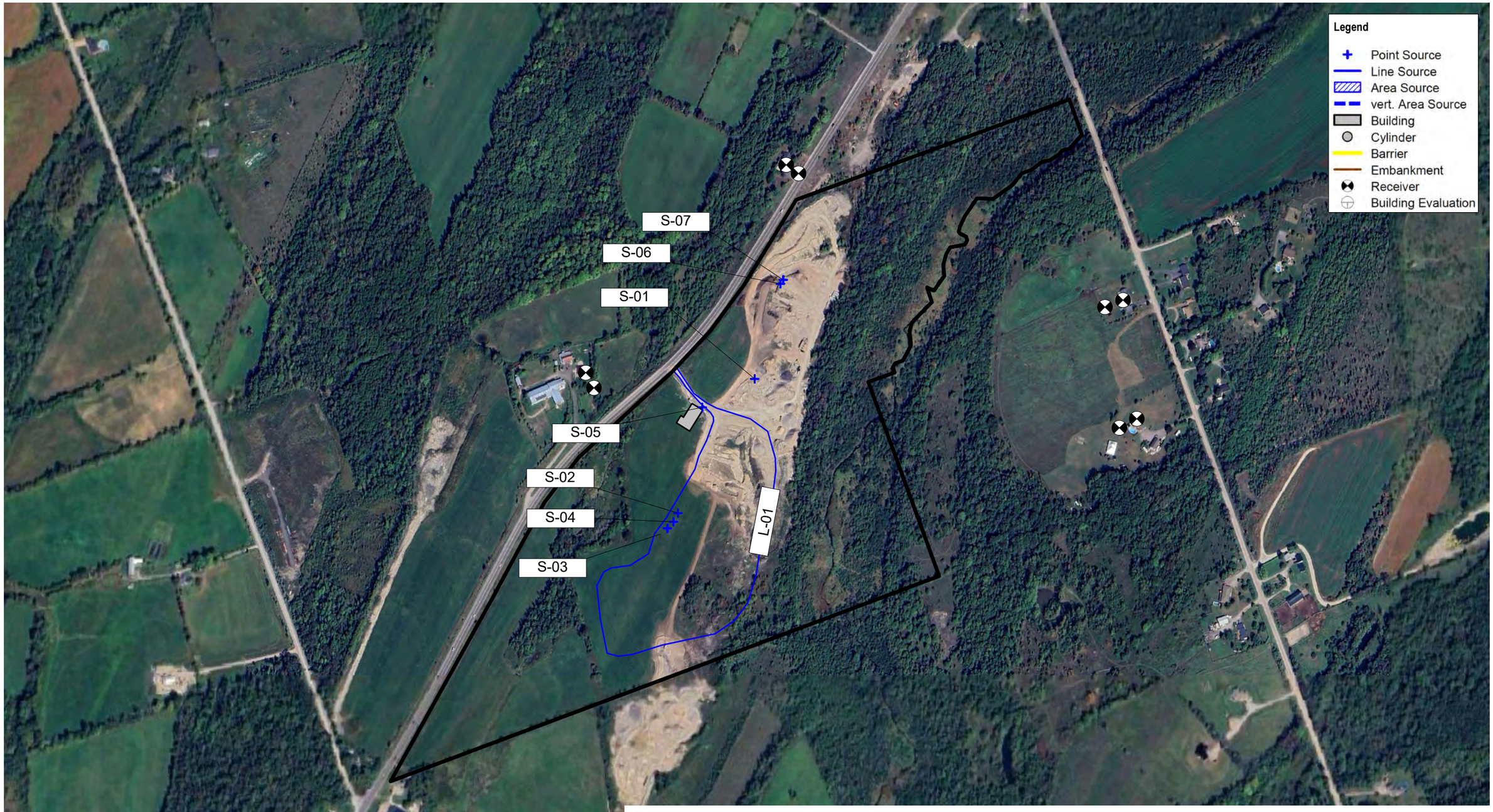
LAND USE COMPATIBILITY STUDY
LEAHY EXCAVATIONS INC.
317 COUNTY ROAD 4, PETERBOROUGH, ONTARIO

NOISE SOURCE LOCATION PLAN
STANDARD OPERATIONS - NORTH

Project No. **12583956**
Revision No. **-**
Date **08.04.2025**

FIGURE 4.2a

\\ghdnet\ghd\CA\Peterborough\Projects\662\12583956\Tech\Land Use Compatibility\CadnaA\12583956_LeahyExcavatingCountyRd4_V2025.04.cna
Imagery source: Google Satellite



Paper Size ANSI B

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Map Projection: Transverse Mercator
Horizontal Datum: North American 1983
Grid: NAD 83 UTM Zone 17N

N

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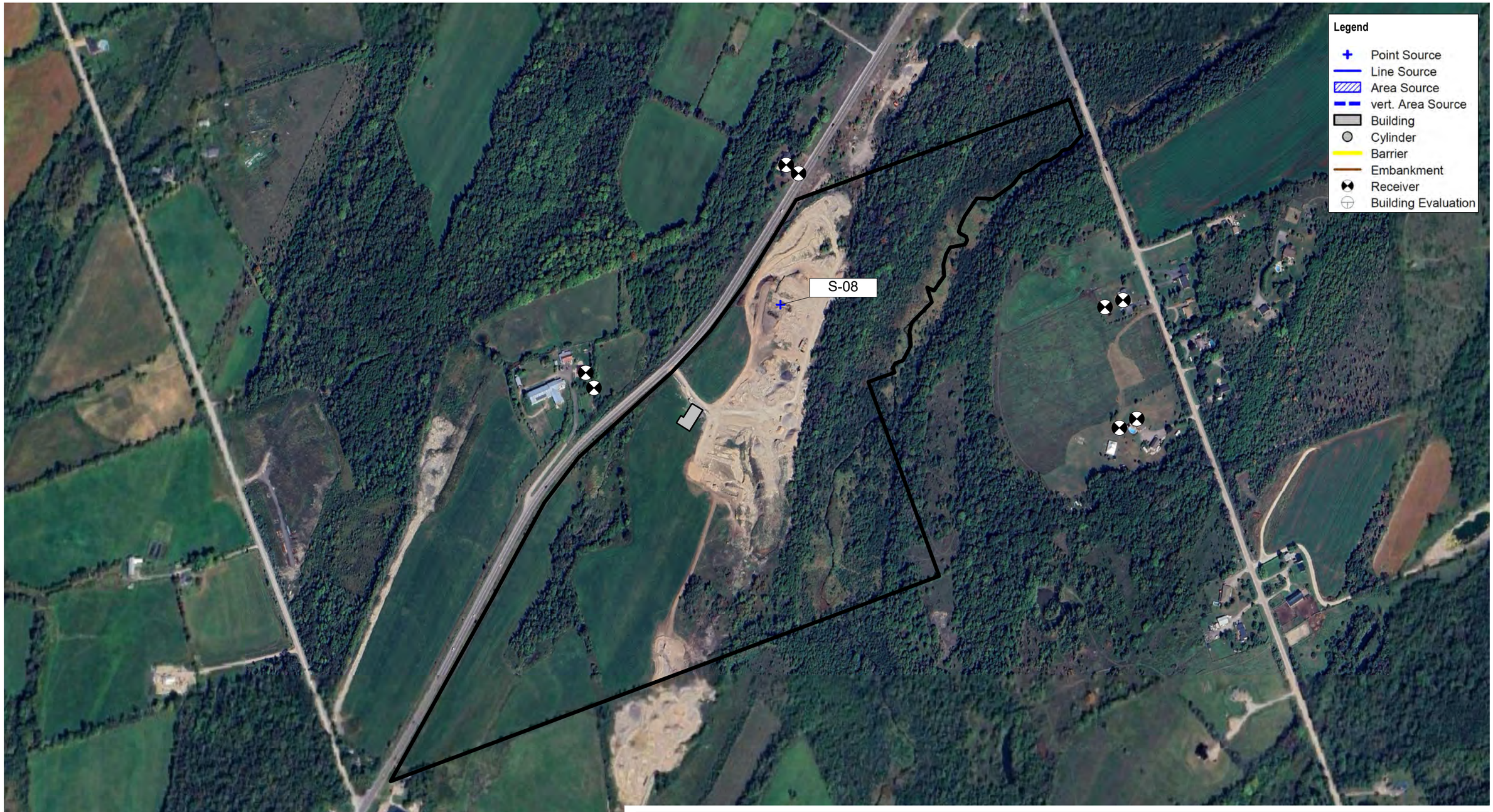
LAND USE COMPATIBILITY STUDY
LEAHY EXCAVATIONS INC.
317 COUNTY ROAD 4, PETERBOROUGH, ONTARIO

NOISE SOURCE LOCATION PLAN
STANDARD OPERATIONS - SOUTH

Project No. **12583956**
Revision No. **-**
Date **08.04.2025**

FIGURE 4.2b

\\ghdnet\ghd\CA\Peterborough\Projects\662\12583956\Tech\Land Use Compatibility\CadnaA\12583956_LeahyExcavatingCountyRd4_V2025.04.cna
Imagery source: Google Satellite



Paper Size ANSI B

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Map Projection: Transverse Mercator
Horizontal Datum: North American 1983
Grid: NAD 83 UTM Zone 17N

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LAND USE COMPATIBILITY STUDY
LEAHY EXCAVATIONS INC.
317 COUNTY ROAD 4, PETERBOROUGH, ONTARIO

NOISE SOURCE LOCATION PLAN
NON-STANDARD OPERATIONS

Project No. **12583956**
Revision No. **-**
Date **08.04.2025**

FIGURE 4.2c

\\ghdnet\ghd\CA\Peterborough\Projects\662\12583956\Tech\Land Use Compatibility\CadnaA\12583956_LeahyExcavatingCountyRd4_V2025.04.cna
Imagery source: Google Satellite

DAY

EVENING PERIOD #1

Legend

- > 35 dBA
- > 36 dBA
- > 37 dBA
- > 38 dBA
- > 39 dBA
- > 40 dBA
- > 41 dBA
- > 42 dBA
- > 43 dBA
- > 44 dBA
- > 45 dBA
- > 46 dBA
- > 47 dBA
- > 48 dBA
- > 49 dBA
- > 50 dBA

Note: Sound levels are presented in terms of 1-hour Leq. Noise contours calculated at a grid height of 4.5 m above grade.

Paper Size ANSI B

0 50 100 150 200 250 m

Map Projection: Transverse Mercator
Horizontal Datum: North American 1983
Grid: NAD 83 UTM Zone 17N

N

GHD

LAND USE COMPATIBILITY STUDY
LEAHY EXCAVATIONS INC.
317 COUNTY ROAD 4, PETERBOROUGH, ONTARIO

UNMITIGATED STATIONARY NOISE: STD. OPS. - N - NOISE CONTOUR PLOT

Project No. **12583956**
Revision No. **-**
Date **08.04.2025**

FIGURE 4.3

\\ghdnet\ghd\CA\Peterborough\Projects\662\12583956\Tech\Land Use Compatibility\CadnaA\12583956_LeahyExcavatingCountyRd4_V2025.04.cna
Imagery source: Google Satellite

DAY

Legend

- > 35 dBA
- > 36 dBA
- > 37 dBA
- > 38 dBA
- > 39 dBA
- > 40 dBA
- > 41 dBA
- > 42 dBA
- > 43 dBA
- > 44 dBA
- > 45 dBA
- > 46 dBA
- > 47 dBA
- > 48 dBA
- > 49 dBA
- > 50 dBA

Note: Sound levels are presented in terms of 1-hour Leq. Noise contours calculated at a grid height of 4.5 m above grade.

EVENING PERIOD #1

Paper Size ANSI B

0 50 100 150 200 250 m

Map Projection: Transverse Mercator
Horizontal Datum: North American 1983
Grid: NAD 83 UTM Zone 17N

N

GHD

LAND USE COMPATIBILITY STUDY
LEAHY EXCAVATIONS INC.
317 COUNTY ROAD 4, PETERBOROUGH, ONTARIO

UNMITIGATED STATIONARY NOISE:
STD. OPS. - S - NOISE CONTOUR PLOT

Project No. 12583956
Revision No. -
Date 08.04.2025

FIGURE 4.4

\\ghdnet\ghd\CA\Peterborough\Projects\662\12583956\Tech\Land Use Compatibility\CadnaA\12583956_LeahyExcavatingCountyRd4_V2025.04.cna
Imagery source: Google Satellite

EVENING PERIOD #2

Legend

- > 35 dBA
- > 36 dBA
- > 37 dBA
- > 38 dBA
- > 39 dBA
- > 40 dBA
- > 41 dBA
- > 42 dBA
- > 43 dBA
- > 44 dBA
- > 45 dBA
- > 46 dBA
- > 47 dBA
- > 48 dBA
- > 49 dBA
- > 50 dBA

Note: Sound levels are presented in terms of 1-hour Leq. Noise contours calculated at a grid height of 4.5 m above grade.

Berm 1
Top Elevation = 225.1 m
Length = 213 m

Berm 2
Top Elevation = 229.0 m
Length = 210 m

Berm 3
Top Elevation = 228.0 m
Length = 361 m

Berm 4
Top Elevation = 222.0 m
Length = 1109 m

Paper Size ANSI B

0 50 100 150 200 250 m

Map Projection: Transverse Mercator
Horizontal Datum: North American 1983
Grid: NAD 83 UTM Zone 17N

N

GHD

LAND USE COMPATIBILITY STUDY
LEAHY EXCAVATIONS INC.
317 COUNTY ROAD 4, PETERBOROUGH, ONTARIO

UNMITIGATED STATIONARY NOISE: NSTD. OPS. - NOISE CONTOUR PLOT

Project No. **12583956**
Revision No. **-**
Date **08.04.2025**

FIGURE 4.5

\\ghdnet\ghd\CA\Peterborough\Projects\662\12583956\Tech\Land Use Compatibility\CadnaA\12583956_LeahyExcavatingCountyRd4_V2025.04.cna
Imagery source: Google Satellite

DAY

Legend

- > 35 dBA
- > 36 dBA
- > 37 dBA
- > 38 dBA
- > 39 dBA
- > 40 dBA
- > 41 dBA
- > 42 dBA
- > 43 dBA
- > 44 dBA
- > 45 dBA
- > 46 dBA
- > 47 dBA
- > 48 dBA
- > 49 dBA
- > 50 dBA

Note: Sound levels are presented in terms of 1-hour Leq. Noise contours calculated at a grid height of 4.5 m above grade.

Berm 1
Top Elevation = 225.1 m
Length = 213 m

Berm 2
Top Elevation = 229.0 m
Length = 210 m

Berm 3
Top Elevation = 228.0 m
Length = 361 m

Berm 4
Top Elevation = 222.0 m
Length = 1109 m

EVENING PERIOD #1

Berm 1
Top Elevation = 225.1 m
Length = 213 m

Berm 2
Top Elevation = 229.0 m
Length = 210 m

Berm 3
Top Elevation = 228.0 m
Length = 361 m

Berm 4
Top Elevation = 222.0 m
Length = 1109 m

Paper Size ANSI B

0 50 100 150 200 250 m

Map Projection: Transverse Mercator
Horizontal Datum: North American 1983
Grid: NAD 83 UTM Zone 17N

N

GHD

LAND USE COMPATIBILITY STUDY
LEAHY EXCAVATIONS INC.
317 COUNTY ROAD 4, PETERBOROUGH, ONTARIO

MITIGATED STATIONARY NOISE:
STD. OPS. - N - NOISE CONTOUR PLOT

Project No. **12583956**
Revision No. **-**
Date **08.04.2025**

FIGURE 4.6

\\ghdnet\ghd\CA\Peterborough\Projects\662\12583956\Tech\Land Use Compatibility\CadnaA\12583956_LeahyExcavatingCountyRd4_V2025.04.cna
Imagery source: Google Satellite

DAY

Legend

- > 35 dBA
- > 36 dBA
- > 37 dBA
- > 38 dBA
- > 39 dBA
- > 40 dBA
- > 41 dBA
- > 42 dBA
- > 43 dBA
- > 44 dBA
- > 45 dBA
- > 46 dBA
- > 47 dBA
- > 48 dBA
- > 49 dBA
- > 50 dBA

Note: Sound levels are presented in terms of 1-hour Leq. Noise contours calculated at a grid height of 4.5 m above grade.

Berm 1
Top Elevation = 225.1 m
Length = 213 m

Berm 2
Top Elevation = 229.0 m
Length = 210 m

Berm 3
Top Elevation = 228.0 m
Length = 361 m

Berm 4
Top Elevation = 222.0 m
Length = 1109 m

EVENING PERIOD #1

Berm 1
Top Elevation = 225.1 m
Length = 213 m

Berm 2
Top Elevation = 229.0 m
Length = 210 m

Berm 3
Top Elevation = 228.0 m
Length = 361 m

Berm 4
Top Elevation = 222.0 m
Length = 1109 m

Paper Size ANSI B

0 50 100 150 200 250 m

Map Projection: Transverse Mercator
Horizontal Datum: North American 1983
Grid: NAD 83 UTM Zone 17N

N

GHD

LAND USE COMPATIBILITY STUDY
LEAHY EXCAVATIONS INC.
317 COUNTY ROAD 4, PETERBOROUGH, ONTARIO

MITIGATED STATIONARY NOISE:
STD. OPS. - S - NOISE CONTOUR PLOT

Project No. **12583956**
Revision No. **-**
Date **08.04.2025**

FIGURE 4.7

\\ghdnet\ghd\CA\Peterborough\Projects\662\12583956\Tech\Land Use Compatibility\CadnaA\12583956_LeahyExcavatingCountyRd4_V2025.04.cna
Imagery source: Google Satellite

EVENING PERIOD #2

Legend

- > 35 dBA
- > 36 dBA
- > 37 dBA
- > 38 dBA
- > 39 dBA
- > 40 dBA
- > 41 dBA
- > 42 dBA
- > 43 dBA
- > 44 dBA
- > 45 dBA
- > 46 dBA
- > 47 dBA
- > 48 dBA
- > 49 dBA
- > 50 dBA

Note: Sound levels are presented in terms of 1-hour Leq. Noise contours calculated at a grid height of 4.5 m above grade.

Berm 1
Top Elevation = 225.1 m
Length = 213 m

Berm 2
Top Elevation = 229.0 m
Length = 210 m

Berm 3
Top Elevation = 228.0 m
Length = 361 m

Berm 4
Top Elevation = 222.0 m
Length = 1109 m

Paper Size ANSI B

0 50 100 150 200 250 m

Map Projection: Transverse Mercator
Horizontal Datum: North American 1983
Grid: NAD 83 UTM Zone 17N

N

GHD

LAND USE COMPATIBILITY STUDY
LEAHY EXCAVATIONS INC.
317 COUNTY ROAD 4, PETERBOROUGH, ONTARIO

MITIGATED STATIONARY NOISE:
NSTD. OPS. - NOISE CONTOUR PLOT

Project No. **12583956**
Revision No. **-**
Date **08.04.2025**

FIGURE 4.8

\\ghdnet\ghd\CA\Peterborough\Projects\662\12583956\Tech\Land Use Compatibility\CadnaA\12583956_LeahyExcavatingCountyRd4_V2025.04.cna
Imagery source: Google Satellite

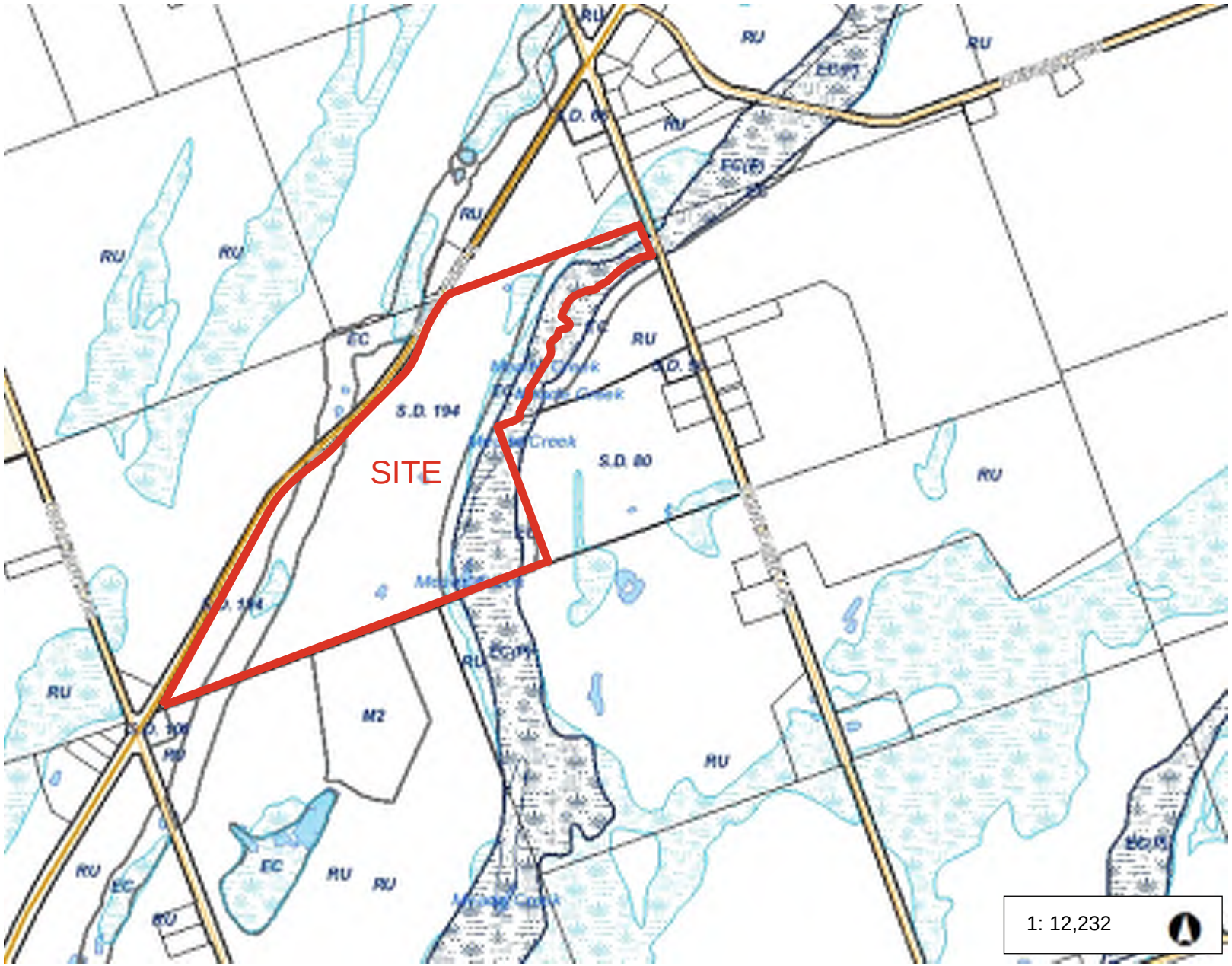
Appendices

Appendix A

Zoning Map and Facility Drawings

County of Peterborough

Figure A.1: County of Peterborough Zoning



Legend

Roads < 50,000

- PRIV ; Private; PRIV
- City Arterial
- City Collector and Local
- City Owned Unclassified
- Provincial
- County
- Township
- Water Access Only

Outside Roads < 50,000

- Major Roads
- Local Roads

- Parcel Fabric
- Parcel First Nations - Canada
- Clean Water Act Policies Apply
- Provincially Significant Wetland
- Locally Significant Wetlands
- Non-evaluated Wetlands
- DD Zoning Bylaws
- Lakes - Local Scale
- Municipal Boundary - Upper Ti
  - <all other values>
  - COUNTY OF PETERBOROUGH

1: 12,232

Notes

621.4 0 310.70 621.4 Meters

NAD83_CSRS98_UTM_zone_17N

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This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.
THIS MAP IS NOT TO BE USED FOR NAVIGATION

ALL DIMENSIONS
ARE APPROXIMATE

Proposed Soil Berm 415 meters from MTO proposed bypass area

Proposed building 500 meters from MTO proposed bypass area

EXISTING ENTRANCE
& DRIVEWAY

8m WIDE
NEW GRAVEL DRIVEWAY

PROPOSED BERM
(SEE DETAIL)

COUNTY ROAD 4

EXISTING
WEIGHING
SCALE

213.50

INV. 212.30

213.70

213.50

213.65

FFE 213.80

FRENCH DRAIN
AND SWALE
@1.0% (SEE
DETAIL)

7.0
(TYP)

214.15

3:1 MAX

213.70

17.5m
200mmø
PVC PIPE
@2.0%

3.0
(TYP)

214.65

213.65

INV. 211.65

INV. 211.30

213.00

213.20

PROPOSED
PARKING

3:1 MAX

213.65

SWALE
@2%

INV. 213.10

213.25

3:1 MAX

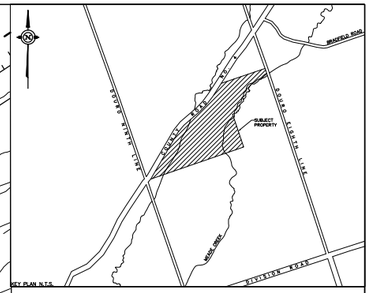
INV. 213.60

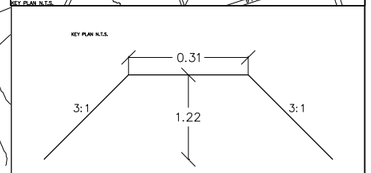
PROPOSED SHOP
(36.6m x 23.2m)

UNNAMED CREEK

30m WATER
SETBACK

PROPOSED
6.0mx10.0mx1.55m DEEP
INFILTRATION BED





BERM DETAIL
N.T.S.

LEGEND

263.70	PROPOSED ELEVATION
248.30	EXISTING ELEVATION
	MINOR FLOW ROUTE
FFE	FINISHED FLOOR ELEVATION
TFW	TOP OF FOUNDATION WALL
USF	UNDER SIDE FOOTING
	DOWN SPOUT
	SWALE
2.0%	GROUND SLOPE
	MAJOR FLOW ROUTE

Nº:	DATE	DESCRIPTION	BY
		REVISIONS	

APPROVAL:

ENGINEER'S SEAL:

LICENSED PROFESSIONAL ENGINEER
W.M.P. FEHERLY
PROVINCE OF ONTARIO

PROJECT TITLE:
LEAHY PIT - ROLL #1522010004048000
PT LOT 3, CON 9, DOURO TOWNSHIP
COUNTY OF PETERBOROUGH

DRAWING TITLE:
SITE PLAN

BaseTech Consulting Inc.
309 Roywood Crescent
Newmarket, Ontario
L3Y 1A6
Phone : (905)-251-7720
e-mail : basetechconsulting@rogers.com

DRAWN BY: DT	PROJECT Nº: 24-08
DESIGNED BY: WMPF	
APPROVED BY: WMPF	DRAWING Nº: GR-2
DATE: JAN 2024	SCALE: 1:500

LAST REVISED APRIL 23-2024

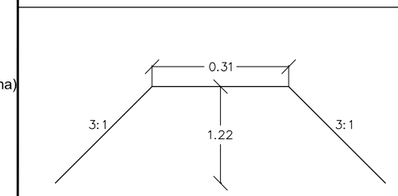
SITE STATISTICS

CURRENT ZONING: SPECIAL DISTRICT 194 (S.D.-194)

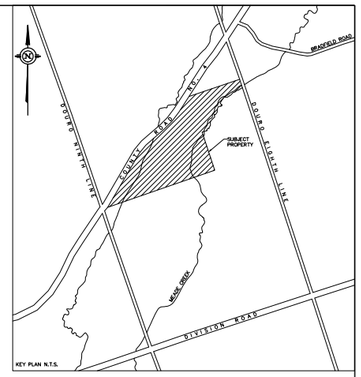
	PERMITTED	EXISTING
MIN. LOT AREA	400000m² (40ha)	359168.6m² (35.92ha)
MIN. LOT FRONTAGE	180m	1081.3m

PROPSOED ZONING: EXTRACTIVE INDUSTRIAL (M2)

	PERMITTED	PROPOSED
MIN. FRONT YARD	30m	51.2m
MIN. SIDE YARD	15m	340.4m
MIN. REAR YARD	15m	260.9m
MIN. WATER YARD	30m	219.4m
MAX. PIT AREA	80000m² (8ha)	2060m² (0.21ha)



BERM DETAIL
N.T.S.



ALL DIMENSIONS ARE APPROXIMATE

LEGEND
MAJOR FLOW ROUTE

PROPOSED BERM (SEE DETAIL)
EXISTING ENTRANCE & DRIVEWAY
APPROX. 2% SLOPE FROM EXTENT OF REGRADING TO INTERIOR 225 MAMSL CONTOUR (50:1 SLOPE)
COUNTY ROAD 4
ZONING SETBACK
UNNAMED CREEK
30m WATER SETBACK
PROPOSED PARKING (S.D. 194)
PROPOSED SHOP (18.3m x 30.5m)
PROPOSED CONTOURS (1m) AND PIT STAGING AREA (APPROX. 2060m²)
EASTERN GRADE FOLLOWS A 4:1 SLOPE 225 MAMSL WAS CHOSEN AS THE EXTENT OF REGRADING BASED ON EXISTING CONTOURS
MEADE CREEK
NON-EVALUATED WETLAND
PROVINCIALLY SIGNIFICANT WETLAND
DOURO EIGHTH LINE
(EC)
(EC-P)
(RU)
(S.D. 194)
439.9
357.1
340.4
313.0
260.9
219.4
227.9
235.7
42.5
51.2
883.8

0 50 100

Nº:	DATE	DESCRIPTION	BY

REVISIONS

PROJECT TITLE:

LEAHY PIT - ROLL #1522010004048000
PT LOT 3, CON 9, DOURO TOWNSHIP
COUNTY OF PETERBOROUGH

DRAWING TITLE:

PROPOSED SITE PLAN

TD Consulting INC.
155 St David St
Lindsay, Ontario
K9V 4Z6
Phone : (647)-535-9461
e-mail : info@td-consulting.ca

DRAWN BY: KM	PROJECT Nº: 022-769
DESIGNED BY: TD	
APPROVED BY: TD	DRAWING Nº: SP-1
DATE: JAN 2023	SCALE: AS SHOWN

LAST REVISED JAN 17-2024

Appendix B

Background Road Traffic Data

Ontario Traffic Inc.
17705 Leslie St., Unit 6
Newmarket, Ontario L3Y 3E3
Tel: (905) 898-7711 Fax: (905) 898-3664

Site Code: 1
Station ID:
CR 4 (Warsaw Rd) between Douro 9th Line & Douro 8th Line
Date Start: 06-Feb-25
Date End: 09-Feb-25
Date Start: 06-Feb-25

EB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
02-06-25	0	8	0	0	0	0	0	0	**1**	0	0	0	0	9
01:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
02:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
03:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
04:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
05:00	0	19	1	0	0	0	0	**1**	1	0	0	0	0	22
06:00	0	58	0	0	0	1	0	0	1	**1**	0	0	0	61
07:00	0	57	15	**4**	2	2	**2**	0	0	0	0	0	0	82
08:00	0	66	24	2	1	**3**	0	0	0	0	0	0	0	**96**
09:00	0	43	17	4	**5**	1	0	0	0	0	0	0	0	70
10:00	0	49	**35**	0	3	2	0	0	0	0	0	0	0	89
11:00	0	**71**	19	1	1	0	0	0	0	0	0	0	0	92
12 PM	0	87	25	0	0	0	0	0	**1**	0	0	0	0	113
13:00	0	80	24	0	4	**1**	0	0	0	0	0	0	0	109
14:00	0	99	30	2	1	1	0	0	0	0	0	0	0	133
15:00	0	124	56	**7**	**5**	0	0	0	0	0	0	0	0	192
16:00	0	**164**	**70**	1	1	1	0	0	0	0	0	0	0	**237**
17:00	0	148	38	1	3	1	0	0	0	0	0	0	0	191
18:00	0	84	19	0	0	0	0	0	0	0	0	0	0	103
19:00	0	81	12	0	1	0	0	0	0	0	0	0	0	94
20:00	0	54	17	0	0	0	0	0	0	0	0	0	0	71
21:00	0	56	10	0	0	0	0	0	0	0	0	0	0	66
22:00	0	31	12	0	0	0	0	0	0	0	0	0	0	43
23:00	0	15	4	0	0	0	0	0	0	0	0	0	0	19
Day Total	0	1407	429	22	27	13	2	1	4	1	0	0	0	1906
Percent	0.0%	73.8%	22.5%	1.2%	1.4%	0.7%	0.1%	0.1%	0.2%	0.1%	0.0%	0.0%	0.0%	
AM Peak		11:00	10:00	07:00	09:00	08:00	07:00	05:00	00:00	06:00				08:00
Vol.		71	35	4	5	3	2	1	1	1				96
PM Peak		16:00	16:00	15:00	15:00	13:00			12:00					16:00
Vol.		164	70	7	5	1			1					237

Ontario Traffic Inc.
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CR 4 (Warsaw Rd) between Douro 9th Line & Douro 8th Line
Date Start: 06-Feb-25
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Date Start: 06-Feb-25

EB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
02-07-25	0	7	0	0	0	0	0	0	**1**	0	0	0	0	8
01:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
02:00	0	3	0	0	0	0	0	0	1	0	0	0	0	4
03:00	0	3	1	0	0	1	0	0	0	0	0	0	0	5
04:00	0	3	2	0	0	1	0	0	0	0	0	0	0	6
05:00	0	15	1	0	3	1	0	0	0	0	0	0	0	20
06:00	0	42	9	0	0	2	0	0	1	0	0	0	0	54
07:00	0	62	21	**3**	3	2	0	0	0	0	0	0	0	91
08:00	0	55	26	2	4	**4**	0	**1**	0	0	0	0	0	92
09:00	0	70	21	3	**7**	2	0	0	1	0	0	0	0	104
10:00	0	71	**27**	0	2	1	0	0	0	0	0	0	0	101
11:00	0	**81**	26	0	4	2	0	1	0	**1**	0	0	0	**115**
12 PM	0	96	44	0	1	**3**	0	0	0	**1**	0	0	0	145
13:00	0	99	42	0	**4**	1	0	**1**	**1**	0	0	0	0	148
14:00	0	111	50	4	3	3	0	0	0	1	0	0	0	172
15:00	0	149	**61**	**5**	0	0	0	0	0	1	0	0	0	**216**
16:00	0	**152**	56	2	1	1	0	0	0	0	0	0	0	212
17:00	0	142	39	0	2	1	0	0	0	0	0	0	0	184
18:00	0	118	9	0	0	0	0	0	0	0	0	0	0	127
19:00	0	118	9	0	0	0	0	0	0	0	0	0	0	127
20:00	0	97	3	0	1	0	0	0	0	0	0	0	0	101
21:00	0	57	4	0	0	0	0	0	0	0	0	0	0	61
22:00	0	47	1	0	1	0	0	0	0	0	0	0	0	49
23:00	0	38	0	0	0	0	0	0	0	0	0	0	0	38
Day Total	0	1638	452	19	36	25	0	3	5	4	0	0	0	2182
Percent	0.0%	75.1%	20.7%	0.9%	1.6%	1.1%	0.0%	0.1%	0.2%	0.2%	0.0%	0.0%	0.0%	
AM Peak		11:00	10:00	07:00	09:00	08:00		08:00	00:00	11:00				11:00
Vol.		81	27	3	7	4		1	1	1				115
PM Peak		16:00	15:00	15:00	13:00	12:00		13:00	13:00	12:00				15:00
Vol.		152	61	5	4	3		1	1	1				216

Ontario Traffic Inc.
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CR 4 (Warsaw Rd) between Douro 9th Line & Douro 8th Line
Date Start: 06-Feb-25
Date End: 09-Feb-25
Date Start: 06-Feb-25

EB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
02-08-25	0	13	0	0	0	0	0	0	0	0	0	0	0	13
01:00	0	7	0	0	0	0	0	0	**1**	0	0	0	0	8
02:00	0	3	0	0	0	0	0	0	1	0	0	0	0	4
03:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
04:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
05:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
06:00	0	11	4	0	1	0	0	0	0	0	0	0	0	16
07:00	0	26	9	0	1	0	0	0	0	0	0	0	0	36
08:00	0	41	18	0	1	0	0	0	0	0	0	0	0	60
09:00	0	51	19	0	**2**	0	0	0	0	0	0	0	0	72
10:00	0	91	**40**	0	0	0	0	0	0	0	0	0	0	131
11:00	0	**105**	29	0	2	0	0	0	0	0	0	0	0	**136**
12 PM	0	**135**	29	0	1	0	0	0	0	0	0	0	0	**165**
13:00	0	127	**31**	0	1	0	0	0	0	0	0	0	0	159
14:00	0	105	29	0	1	0	0	0	0	0	0	0	0	135
15:00	0	99	30	0	0	**1**	0	0	0	0	0	0	0	130
16:00	0	89	28	**1**	0	0	0	0	**1**	0	0	0	0	119
17:00	0	84	20	0	0	0	0	0	0	0	0	0	0	104
18:00	0	63	12	0	**2**	0	0	0	0	0	0	0	0	77
19:00	0	71	11	0	0	0	0	0	0	0	0	0	0	82
20:00	0	46	6	0	0	0	0	0	0	0	0	0	0	52
21:00	0	23	7	0	0	0	0	0	0	0	0	0	0	30
22:00	0	29	6	0	0	0	0	0	0	0	0	0	0	35
23:00	0	15	2	0	0	0	0	0	0	0	0	0	0	17
Day Total	0	1244	332	1	12	1	0	0	3	0	0	0	0	1593
Percent	0.0%	78.1%	20.8%	0.1%	0.8%	0.1%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	
AM Peak		11:00	10:00		09:00				01:00					11:00
Vol.		105	40		2				1					136
PM Peak		12:00	13:00	16:00	18:00	15:00			16:00					12:00
Vol.		135	31	1	2	1			1					165

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Date Start: 06-Feb-25

EB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
02-09-25	0	9	0	0	0	0	0	0	0	0	0	0	0	9
01:00	0	9	0	0	0	0	0	0	0	0	0	0	0	9
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
04:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
05:00	0	4	1	0	0	0	0	0	0	0	0	0	0	5
06:00	0	10	5	0	0	0	0	0	0	0	0	0	0	15
07:00	0	21	7	0	0	**1**	0	0	0	0	0	0	0	29
08:00	0	38	16	0	4	0	0	0	0	0	0	0	0	58
09:00	0	37	14	0	**7**	1	0	0	**1**	0	0	0	0	60
10:00	0	72	**22**	**1**	5	0	0	0	1	0	0	0	0	101
11:00	0	**87**	21	1	0	0	0	0	1	0	0	0	0	**110**
12 PM	0	**102**	27	0	**5**	0	0	0	**2**	0	0	0	**1**	**137**
13:00	0	92	24	0	2	0	0	0	0	0	0	0	0	118
14:00	0	91	22	0	0	**1**	0	0	2	0	0	0	0	116
15:00	0	82	**28**	0	0	0	0	0	2	0	0	0	0	112
16:00	0	95	22	0	4	0	0	0	0	0	0	0	0	121
17:00	0	67	16	0	2	0	0	0	2	0	0	0	0	87
18:00	0	57	12	0	0	0	0	0	0	0	0	0	0	69
19:00	0	51	11	**1**	0	0	0	0	0	0	0	0	0	63
20:00	0	28	7	0	3	0	0	0	0	0	0	0	0	38
21:00	0	15	6	0	0	0	0	0	0	0	0	0	0	21
22:00	0	23	4	0	0	0	0	0	0	0	0	0	0	27
23:00	0	12	0	0	0	0	0	0	0	0	0	0	0	12
Day Total	0	1005	265	3	32	3	0	0	11	0	0	0	1	1320
Percent	0.0%	76.1%	20.1%	0.2%	2.4%	0.2%	0.0%	0.0%	0.8%	0.0%	0.0%	0.0%	0.1%	
AM Peak		11:00	10:00	10:00	09:00	07:00			09:00					11:00
Vol.		87	22	1	7	1			1					110
PM Peak		12:00	15:00	19:00	12:00	14:00			12:00				12:00	12:00
Vol.		102	28	1	5	1			2				1	137
Grand Total	0	5294	1478	45	107	42	2	4	23	5	0	0	1	7001
Percent	0.0%	75.6%	21.1%	0.6%	1.5%	0.6%	0.0%	0.1%	0.3%	0.1%	0.0%	0.0%	0.0%	

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WB

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02-06-25	0	3	0	0	0	0	0	0	0	0	0	0	0	3
01:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
02:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
03:00	0	6	1	0	0	0	0	0	0	0	0	0	0	7
04:00	0	20	1	0	0	0	0	0	0	0	0	0	0	21
05:00	0	46	2	0	1	0	0	0	0	0	0	0	0	49
06:00	0	100	8	0	1	0	0	0	0	0	0	0	0	109
07:00	0	153	52	4	3	**5**	0	**1**	0	0	0	0	0	218
08:00	0	**176**	**65**	**7**	0	4	**1**	0	0	0	0	0	0	**253**
09:00	0	101	35	0	**4**	1	0	0	0	0	0	0	0	141
10:00	0	67	40	1	1	1	0	0	0	0	0	0	0	110
11:00	0	56	18	0	2	0	0	0	0	0	0	0	0	76
12 PM	0	60	17	0	0	0	0	0	0	0	0	0	0	77
13:00	0	78	33	1	2	**4**	0	0	**1**	0	0	0	0	119
14:00	0	70	32	**2**	2	1	0	0	1	0	0	0	0	108
15:00	0	83	**39**	1	0	1	0	0	0	**1**	0	0	0	125
16:00	0	104	28	1	2	1	0	0	0	0	0	0	0	136
17:00	0	**117**	36	1	**3**	1	0	0	0	0	0	0	0	**158**
18:00	0	80	12	0	1	3	0	0	0	0	0	0	0	96
19:00	0	47	1	0	1	2	0	0	0	0	0	0	0	51
20:00	0	24	3	0	0	0	0	0	0	0	0	0	0	27
21:00	0	25	2	0	0	0	0	0	0	0	0	0	0	27
22:00	0	20	2	0	0	0	0	0	0	0	0	0	0	22
23:00	0	17	0	0	0	0	0	0	0	0	0	0	0	17
Day Total	0	1459	427	18	23	24	1	1	2	1	0	0	0	1956
Percent	0.0%	74.6%	21.8%	0.9%	1.2%	1.2%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	
AM Peak		08:00	08:00	08:00	09:00	07:00	08:00	07:00						08:00
Vol.		176	65	7	4	5	1	1						253
PM Peak		17:00	15:00	14:00	17:00	13:00			13:00	15:00				17:00
Vol.		117	39	2	3	4			1	1				158

Ontario Traffic Inc.
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CR 4 (Warsaw Rd) between Douro 9th Line & Douro 8th Line
Date Start: 06-Feb-25
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Date Start: 06-Feb-25

WB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
02-07-25	0	3	1	0	0	0	0	0	0	0	0	0	0	4
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
03:00	0	6	3	0	1	0	0	0	0	0	0	0	0	10
04:00	0	14	4	0	1	0	0	0	0	0	0	0	0	19
05:00	0	27	9	0	1	0	0	0	0	0	0	0	0	37
06:00	0	65	22	0	2	1	0	0	0	0	0	0	0	90
07:00	0	112	**61**	**5**	2	**4**	**1**	**1**	0	0	0	0	0	186
08:00	0	**171**	57	5	2	2	0	0	0	0	0	0	0	**237**
09:00	0	92	40	0	4	0	0	0	0	0	0	0	0	136
10:00	0	93	43	0	**8**	1	0	0	**2**	0	0	0	0	147
11:00	0	95	43	0	4	3	0	0	2	0	0	0	0	147
12 PM	0	72	**48**	0	2	**5**	**1**	0	**1**	**1**	0	0	0	130
13:00	0	103	37	0	2	4	0	**1**	0	0	0	0	0	147
14:00	0	108	45	**2**	1	1	0	0	0	0	0	0	0	157
15:00	0	102	39	2	**5**	1	0	0	0	0	0	0	0	149
16:00	0	**120**	40	1	5	1	1	0	1	1	0	0	0	**170**
17:00	0	100	31	1	2	1	0	0	0	0	0	0	0	135
18:00	0	99	16	0	1	0	0	0	0	0	0	0	0	116
19:00	0	59	12	0	0	0	0	0	0	0	0	0	0	71
20:00	0	26	7	0	1	0	0	0	0	1	0	0	0	35
21:00	0	40	6	0	0	0	0	0	0	0	0	0	0	46
22:00	0	23	4	0	0	0	0	0	0	0	0	0	0	27
23:00	0	15	4	0	0	0	0	0	0	0	0	0	0	19
Day Total	0	1549	572	16	44	24	3	2	6	3	0	0	0	2219
Percent	0.0%	69.8%	25.8%	0.7%	2.0%	1.1%	0.1%	0.1%	0.3%	0.1%	0.0%	0.0%	0.0%	
AM Peak		08:00	07:00	07:00	10:00	07:00	07:00	07:00	10:00					08:00
Vol.		171	61	5	8	4	1	1	2					237
PM Peak		16:00	12:00	14:00	15:00	12:00	12:00	13:00	12:00	12:00				16:00
Vol.		120	48	2	5	5	1	1	1	1				170

Ontario Traffic Inc.
17705 Leslie St., Unit 6
Newmarket, Ontario L3Y 3E3
Tel: (905) 898-7711 Fax: (905) 898-3664

Site Code: 1
Station ID:
CR 4 (Warsaw Rd) between Douro 9th Line & Douro 8th Line
Date Start: 06-Feb-25
Date End: 09-Feb-25
Date Start: 06-Feb-25

WB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
02-08-25	0	8	0	0	0	0	0	0	0	0	0	0	0	8
01:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
04:00	0	8	1	0	0	0	0	0	0	0	0	0	0	9
05:00	0	16	3	0	0	**1**	0	0	0	0	0	0	0	20
06:00	0	34	4	0	0	0	0	0	**1**	0	0	0	0	39
07:00	0	33	16	0	1	0	0	0	0	0	0	0	0	50
08:00	0	60	21	0	0	0	0	0	0	0	0	0	0	81
09:00	0	101	32	0	0	0	0	0	0	0	0	0	0	133
10:00	0	**125**	36	0	**3**	0	0	0	0	0	0	0	0	164
11:00	0	120	**43**	**1**	3	0	0	0	0	0	0	0	0	**167**
12 PM	0	**124**	41	0	**2**	0	0	0	0	0	0	0	0	**167**
13:00	0	112	**42**	0	0	0	0	0	**1**	0	0	0	0	155
14:00	0	114	37	0	0	0	0	**1**	0	0	0	0	0	152
15:00	0	110	34	0	0	0	0	0	0	0	0	0	0	144
16:00	0	119	27	0	2	**1**	0	0	0	0	0	0	0	149
17:00	0	96	20	**1**	0	0	0	0	0	0	0	0	0	117
18:00	0	73	7	0	0	0	0	0	0	0	0	0	0	80
19:00	0	62	3	0	0	0	0	0	0	0	0	0	0	65
20:00	0	38	4	0	0	0	0	0	0	0	0	0	0	42
21:00	0	20	5	0	0	0	0	0	0	0	0	0	0	25
22:00	0	25	4	0	0	1	0	0	0	0	0	0	0	30
23:00	0	16	1	0	0	0	0	0	0	0	0	0	0	17
Day Total	0	1421	381	2	11	3	0	1	2	0	0	0	0	1821
Percent	0.0%	78.0%	20.9%	0.1%	0.6%	0.2%	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	
AM Peak		10:00	11:00	11:00	10:00	05:00			06:00					11:00
Vol.		125	43	1	3	1			1					167
PM Peak		12:00	13:00	17:00	12:00	16:00		14:00	13:00					12:00
Vol.		124	42	1	2	1		1	1					167

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Site Code: 1
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CR 4 (Warsaw Rd) between Douro 9th Line & Douro 8th Line
Date Start: 06-Feb-25
Date End: 09-Feb-25
Date Start: 06-Feb-25

WB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
02-09-25	0	5	0	0	0	0	0	0	0	0	0	0	0	5
01:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
04:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
05:00	0	15	2	0	0	0	0	0	0	0	0	0	0	17
06:00	0	26	13	0	0	0	0	0	0	0	0	0	0	39
07:00	0	30	10	0	**2**	0	0	0	**1**	0	0	0	0	43
08:00	0	57	21	0	1	2	0	0	1	0	0	0	0	82
09:00	0	92	24	**1**	2	1	0	0	0	0	0	0	0	120
10:00	0	97	**35**	0	0	2	0	0	1	0	0	0	0	135
11:00	0	**98**	33	0	2	**3**	0	0	0	0	0	0	0	**136**
12 PM	0	88	34	1	0	1	0	0	0	0	**1**	0	0	125
13:00	0	84	30	0	2	0	0	1	0	0	0	0	0	117
14:00	0	96	**36**	0	1	0	0	0	0	0	0	0	0	133
15:00	0	98	29	0	**8**	0	0	0	1	0	0	0	0	136
16:00	0	**112**	26	0	1	1	0	0	1	0	0	0	0	**141**
17:00	0	80	17	0	2	0	0	**2**	1	0	0	0	0	102
18:00	0	73	7	**3**	2	1	0	2	**2**	0	0	0	0	90
19:00	0	49	6	1	0	**2**	0	0	0	0	0	0	0	58
20:00	0	27	3	0	0	1	0	0	0	0	0	0	0	31
21:00	0	19	4	0	0	0	0	0	0	0	0	0	0	23
22:00	0	18	6	0	0	0	0	0	0	0	0	0	0	24
23:00	0	15	0	0	0	0	0	0	0	0	0	0	0	15
Day Total	0	1193	336	6	23	14	0	5	8	0	1	0	0	1586
Percent	0.0%	75.2%	21.2%	0.4%	1.5%	0.9%	0.0%	0.3%	0.5%	0.0%	0.1%	0.0%	0.0%	
AM Peak		11:00	10:00	09:00	07:00	11:00			07:00					11:00
Vol.		98	35	1	2	3			1					136
PM Peak		16:00	14:00	18:00	15:00	19:00		17:00	18:00		12:00			16:00
Vol.		112	36	3	8	2		2	2		1			141
Grand Total	0	5622	1716	42	101	65	4	9	18	4	1	0	0	7582
Percent	0.0%	74.1%	22.6%	0.6%	1.3%	0.9%	0.1%	0.1%	0.2%	0.1%	0.0%	0.0%	0.0%	

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Site Code: 1
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CR 4 (Warsaw Rd) between Douro 9th Line & Douro 8th Line
Date Start: 06-Feb-25
Date End: 09-Feb-25
Date Start: 06-Feb-25

EB, WB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
02-06-25	0	11	0	0	0	0	0	0	**1**	0	0	0	0	12
01:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
02:00	0	8	0	0	0	0	0	0	0	0	0	0	0	8
03:00	0	10	1	0	0	0	0	0	0	0	0	0	0	11
04:00	0	22	1	0	0	0	0	0	0	0	0	0	0	23
05:00	0	65	3	0	1	0	0	**1**	1	0	0	0	0	71
06:00	0	158	8	0	1	1	0	0	1	**1**	0	0	0	170
07:00	0	210	67	8	5	**7**	**2**	1	0	0	0	0	0	300
08:00	0	**242**	**89**	**9**	1	7	1	0	0	0	0	0	0	**349**
09:00	0	144	52	4	**9**	2	0	0	0	0	0	0	0	211
10:00	0	116	75	1	4	3	0	0	0	0	0	0	0	199
11:00	0	127	37	1	3	0	0	0	0	0	0	0	0	168
12 PM	0	147	42	0	0	0	0	0	**1**	0	0	0	0	190
13:00	0	158	57	1	**6**	**5**	0	0	1	0	0	0	0	228
14:00	0	169	62	4	3	2	0	0	1	0	0	0	0	241
15:00	0	207	95	**8**	5	1	0	0	0	**1**	0	0	0	317
16:00	0	**268**	**98**	2	3	2	0	0	0	0	0	0	0	**373**
17:00	0	265	74	2	6	2	0	0	0	0	0	0	0	349
18:00	0	164	31	0	1	3	0	0	0	0	0	0	0	199
19:00	0	128	13	0	2	2	0	0	0	0	0	0	0	145
20:00	0	78	20	0	0	0	0	0	0	0	0	0	0	98
21:00	0	81	12	0	0	0	0	0	0	0	0	0	0	93
22:00	0	51	14	0	0	0	0	0	0	0	0	0	0	65
23:00	0	32	4	0	0	0	0	0	0	0	0	0	0	36
Day Total	0	2866	856	40	50	37	3	2	6	2	0	0	0	3862
Percent	0.0%	74.2%	22.2%	1.0%	1.3%	1.0%	0.1%	0.1%	0.2%	0.1%	0.0%	0.0%	0.0%	
AM Peak		08:00	08:00	08:00	09:00	07:00	07:00	05:00	00:00	06:00				08:00
Vol.		242	89	9	9	7	2	1	1	1				349
PM Peak		16:00	16:00	15:00	13:00	13:00			12:00	15:00				16:00
Vol.		268	98	8	6	5			1	1				373

Ontario Traffic Inc.
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Site Code: 1
Station ID:
CR 4 (Warsaw Rd) between Douro 9th Line & Douro 8th Line
Date Start: 06-Feb-25
Date End: 09-Feb-25
Date Start: 06-Feb-25

EB, WB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
02-07-25	0	10	1	0	0	0	0	0	1	0	0	0	0	12
01:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
02:00	0	7	0	0	0	0	0	0	1	0	0	0	0	8
03:00	0	9	4	0	1	1	0	0	0	0	0	0	0	15
04:00	0	17	6	0	1	1	0	0	0	0	0	0	0	25
05:00	0	42	10	0	4	1	0	0	0	0	0	0	0	57
06:00	0	107	31	0	2	3	0	0	1	0	0	0	0	144
07:00	0	174	82	**8**	5	**6**	**1**	**1**	0	0	0	0	0	277
08:00	0	**226**	**83**	7	6	6	0	1	0	0	0	0	0	**329**
09:00	0	162	61	3	**11**	2	0	0	1	0	0	0	0	240
10:00	0	164	70	0	10	2	0	0	**2**	0	0	0	0	248
11:00	0	176	69	0	8	5	0	1	2	**1**	0	0	0	262
12 PM	0	168	92	0	3	**8**	**1**	0	**1**	**2**	0	0	0	275
13:00	0	202	79	0	**6**	5	0	**2**	1	0	0	0	0	295
14:00	0	219	95	6	4	4	0	0	0	1	0	0	0	329
15:00	0	251	**100**	**7**	5	1	0	0	0	1	0	0	0	365
16:00	0	**272**	96	3	6	2	1	0	1	1	0	0	0	**382**
17:00	0	242	70	1	4	2	0	0	0	0	0	0	0	319
18:00	0	217	25	0	1	0	0	0	0	0	0	0	0	243
19:00	0	177	21	0	0	0	0	0	0	0	0	0	0	198
20:00	0	123	10	0	2	0	0	0	0	1	0	0	0	136
21:00	0	97	10	0	0	0	0	0	0	0	0	0	0	107
22:00	0	70	5	0	1	0	0	0	0	0	0	0	0	76
23:00	0	53	4	0	0	0	0	0	0	0	0	0	0	57
Day Total	0	3187	1024	35	80	49	3	5	11	7	0	0	0	4401
Percent	0.0%	72.4%	23.3%	0.8%	1.8%	1.1%	0.1%	0.1%	0.2%	0.2%	0.0%	0.0%	0.0%	
AM Peak		08:00	08:00	07:00	09:00	07:00	07:00	07:00	10:00	11:00				08:00
Vol.		226	83	8	11	6	1	1	2	1				329
PM Peak		16:00	15:00	15:00	13:00	12:00	12:00	13:00	12:00	12:00				16:00
Vol.		272	100	7	6	8	1	2	1	2				382

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CR 4 (Warsaw Rd) between Douro 9th Line & Douro 8th Line
Date Start: 06-Feb-25
Date End: 09-Feb-25
Date Start: 06-Feb-25

EB, WB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
02-08-25	0	21	0	0	0	0	0	0	0	0	0	0	0	21
01:00	0	10	0	0	0	0	0	0	**1**	0	0	0	0	11
02:00	0	4	0	0	0	0	0	0	1	0	0	0	0	5
03:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
04:00	0	11	2	0	0	0	0	0	0	0	0	0	0	13
05:00	0	21	4	0	0	**1**	0	0	0	0	0	0	0	26
06:00	0	45	8	0	1	0	0	0	1	0	0	0	0	55
07:00	0	59	25	0	2	0	0	0	0	0	0	0	0	86
08:00	0	101	39	0	1	0	0	0	0	0	0	0	0	141
09:00	0	152	51	0	2	0	0	0	0	0	0	0	0	205
10:00	0	216	**76**	0	3	0	0	0	0	0	0	0	0	295
11:00	0	**225**	72	**1**	**5**	0	0	0	0	0	0	0	0	**303**
12 PM	0	**259**	70	0	**3**	0	0	0	0	0	0	0	0	**332**
13:00	0	239	**73**	0	1	0	0	0	**1**	0	0	0	0	314
14:00	0	219	66	0	1	0	0	**1**	0	0	0	0	0	287
15:00	0	209	64	0	0	**1**	0	0	0	0	0	0	0	274
16:00	0	208	55	**1**	2	1	0	0	1	0	0	0	0	268
17:00	0	180	40	1	0	0	0	0	0	0	0	0	0	221
18:00	0	136	19	0	2	0	0	0	0	0	0	0	0	157
19:00	0	133	14	0	0	0	0	0	0	0	0	0	0	147
20:00	0	84	10	0	0	0	0	0	0	0	0	0	0	94
21:00	0	43	12	0	0	0	0	0	0	0	0	0	0	55
22:00	0	54	10	0	0	1	0	0	0	0	0	0	0	65
23:00	0	31	3	0	0	0	0	0	0	0	0	0	0	34
Day Total	0	2665	713	3	23	4	0	1	5	0	0	0	0	3414
Percent	0.0%	78.1%	20.9%	0.1%	0.7%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	
AM Peak		11:00	10:00	11:00	11:00	05:00			01:00					11:00
Vol.		225	76	1	5	1			1					303
PM Peak		12:00	13:00	16:00	12:00	15:00		14:00	13:00					12:00
Vol.		259	73	1	3	1		1	1					332

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Date Start: 06-Feb-25
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EB, WB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
02-09-25	0	14	0	0	0	0	0	0	0	0	0	0	0	14
01:00	0	13	0	0	0	0	0	0	0	0	0	0	0	13
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
04:00	0	7	0	0	0	0	0	0	0	0	0	0	0	7
05:00	0	19	3	0	0	0	0	0	0	0	0	0	0	22
06:00	0	36	18	0	0	0	0	0	0	0	0	0	0	54
07:00	0	51	17	0	2	1	0	0	1	0	0	0	0	72
08:00	0	95	37	0	5	2	0	0	1	0	0	0	0	140
09:00	0	129	38	**1**	**9**	2	0	0	1	0	0	0	0	180
10:00	0	169	**57**	1	5	2	0	0	**2**	0	0	0	0	236
11:00	0	**185**	54	1	2	**3**	0	0	1	0	0	0	0	**246**
12 PM	0	190	**61**	1	5	1	0	0	2	0	**1**	0	**1**	**262**
13:00	0	176	54	0	4	0	0	1	0	0	0	0	0	235
14:00	0	187	58	0	1	1	0	0	2	0	0	0	0	249
15:00	0	180	57	0	**8**	0	0	0	**3**	0	0	0	0	248
16:00	0	**207**	48	0	5	1	0	0	1	0	0	0	0	262
17:00	0	147	33	0	4	0	0	**2**	3	0	0	0	0	189
18:00	0	130	19	**3**	2	1	0	2	2	0	0	0	0	159
19:00	0	100	17	2	0	**2**	0	0	0	0	0	0	0	121
20:00	0	55	10	0	3	1	0	0	0	0	0	0	0	69
21:00	0	34	10	0	0	0	0	0	0	0	0	0	0	44
22:00	0	41	10	0	0	0	0	0	0	0	0	0	0	51
23:00	0	27	0	0	0	0	0	0	0	0	0	0	0	27
Day Total	0	2198	601	9	55	17	0	5	19	0	1	0	1	2906
Percent	0.0%	75.6%	20.7%	0.3%	1.9%	0.6%	0.0%	0.2%	0.7%	0.0%	0.0%	0.0%	0.0%	
AM Peak		11:00	10:00	09:00	09:00	11:00			10:00					11:00
Vol.		185	57	1	9	3			2					246
PM Peak		16:00	12:00	18:00	15:00	19:00		17:00	15:00		12:00		12:00	12:00
Vol.		207	61	3	8	2		2	3		1		1	262
Grand Total	0	10916	3194	87	208	107	6	13	41	9	1	0	1	14583
Percent	0.0%	74.9%	21.9%	0.6%	1.4%	0.7%	0.0%	0.1%	0.3%	0.1%	0.0%	0.0%	0.0%	

Appendix C

Noise Source Sound Level Summary

Table C.1

Noise Source Sound Level Summary
Leahy Excavations Inc.
317 County Road 4, Peterborough, Ontario

Cadna A ID	Noise Source Description		1/1 Octave Band Data									Unadjusted Total Sound Power Level	Tonal Penalty Assessment		Height Absolute	Operating Time Day/Eve/Night	Vehicle Volumes Day/Eve/Night	Speed	Reference/Comments
			32	63	125	250	500	1000	2000	4000	8000	(dBA)		(dBA)	(m)	(min)	(veh/hr)	(km/hr)	
L-01	Haul Truck Movements	PWL (dB)	30.6	116.6	111.6	104.6	106.6	103.6	102.6	99.6	90.6	118.6							Referenced from US Federal Highway Administration (FHWA)
		A-weighted correction	-39.4	-26.2	-16.1	-8.6	-3.2	0.0	1.2	1.0	-1.1								Traffic Noise Model (TNM) Technical Manual, December 2019
		PWL (dBA)	—	90.4	95.5	96.0	103.4	103.6	103.8	100.6	89.5	**109.5**	No	0	215.0	—	4/2/0	20	Heavy Trucks: Cruise Throttle - TNM Technical Manual, Figure 6, p. 26
S-01	Excavator	PWL (dB)	98.1	100.4	109.3	106.3	102.7	101.4	102.8	92.7	82.9	113.0							
		A-weighted correction	-39.4	-26.2	-16.1	-8.6	-3.2	0.0	1.2	1.0	-1.1								
		PWL (dBA)	58.7	74.2	93.2	97.7	99.5	101.4	104.0	93.7	81.8	**107.7**	No	0	209.5	60/30/60	—	—	GHD Site Measurement
S-02	Loader	PWL (dB)	105.7	107.2	97.2	92.7	85.5	85.4	82.3	77.9	77.2	109.9							
		A-weighted correction	-39.4	-26.2	-16.1	-8.6	-3.2	0.0	1.2	1.0	-1.1								
		PWL (dBA)	66.3	81.0	81.1	84.1	82.3	85.4	83.5	78.9	76.1	**91.4**	No	0	210.9	60/30/60	—	—	GHD Site Measurement
S-03	Dozer	PWL (dB)	31.0	105.0	114.0	109.0	105.0	105.0	101.0	98.0	93.0	116.5							
		A-weighted correction	-39.4	-26.2	-16.1	-8.6	-3.2	0.0	1.2	1.0	-1.1								
		PWL (dBA)	-8.4	78.8	97.9	100.4	101.8	105.0	102.2	99.0	91.9	**109.5**	No	0	209.7	60/30/60	—	—	GHD Reference Spectra
S-04	Truck Idling	PWL (dB)	84.0	87.0	91.0	90.0	87.0	83.0	80.0	73.0	66.0	95.8							
		A-weighted correction	-39.4	-26.2	-16.1	-8.6	-3.2	0.0	1.2	1.0	-1.1								
		PWL (dBA)	44.6	60.8	74.9	81.4	83.8	83.0	81.2	74.0	64.9	**88.9**	No	0	209.9	60/30/60	—	—	GHD Reference Spectra
S-05	Truck Idling	PWL (dB)	84.0	87.0	91.0	90.0	87.0	83.0	80.0	73.0	66.0	95.8							
		A-weighted correction	-39.4	-26.2	-16.1	-8.6	-3.2	0.0	1.2	1.0	-1.1								
		PWL (dBA)	44.6	60.8	74.9	81.4	83.8	83.0	81.2	74.0	64.9	**88.9**	No	0	215.5	60/30/60	—	—	GHD Reference Spectra
S-06	Screener	PWL (dB)	98.0	94.8	98.8	99.1	98.2	98.2	99.7	97.4	91.6	107.4							
		A-weighted correction	-39.4	-26.2	-16.1	-8.6	-3.2	0.0	1.2	1.0	-1.1								
		PWL (dBA)	58.6	68.6	82.7	90.5	95.0	98.2	100.9	98.4	90.5	**105.0**	No	0	210.3	60/30/60	—	—	GHD Reference Spectra
S-07	Stacker	PWL (dB)	96.0	98.0	103.0	100.0	97.0	94.0	92.0	89.0	81.0	107.0							
		A-weighted correction	-39.4	-26.2	-16.1	-8.6	-3.2	0.0	1.2	1.0	-1.1								
		PWL (dBA)	56.6	71.8	86.9	91.4	93.8	94.0	93.2	90.0	79.9	**100.0**	No	0	209.3	60/30/60	—	—	GHD Reference Spectra
S-08	Vacuum Truck	PWL (dB)	105.0	103.0	114.0	109.0	108.0	107.0	104.0	100.0	95.0	117.3							
		A-weighted correction	-39.4	-26.2	-16.1	-8.6	-3.2	0.0	1.2	1.0	-1.1								
		PWL (dBA)	65.6	76.8	97.9	100.4	104.8	107.0	105.2	101.0	93.9	**111.6**	No	0	208.4	0/30/0	—	—	GHD Reference Spectra

Appendix D

Sample STAMSON Calculation

STAMSON 5.0 SUMMARY REPORT Date: 25-03-2025 11:49:55
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: leahy.te Time Period: 1 hours
Description: POR-01A SOUTH FACADE SAMPLE STAMSON CALC EVENING

Road data, segment # 1: COUNTY RD 4

Car traffic volume : 117 veh/TimePeriod
Medium truck volume : 2 veh/TimePeriod
Heavy truck volume : 2 veh/TimePeriod
Posted speed limit : 80 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: COUNTY RD 4

Angle1 Angle2 : -64.00 deg 59.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 77.15 m
Receiver height : 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Result summary
---

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.COUNTY RD 4	1.13	47.58	47.58
Total			47.58 dBA

TOTAL Leq FROM ALL SOURCES: 47.58