

September 9, 2026

PRELIMINARY ENVIRONMENTAL NOISE REPORT

PROPOSED RESIDENTIAL DEVELOPMENT
14475 HIGHWAY 50
TOWN OF CALEDON

PREPARED FOR
OAKBANK ESTATES INC.

PREPARED BY

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SUMMARY

The proposed residential development is located east of Highway 50 and generally between Columbia Way and Emil Kolb Parkway in the Town of Caledon. It is subject to road traffic noise from Highway 50, Emil Kolb Parkway and proposed internal collector roadways. Additionally, potential noise associated with existing commercial, and industrial developments have been evaluated. The subject site is not affected by rail or aircraft noise.

The environmental noise guidelines for transportation and stationary noise sources of the Town of Caledon, the Region of Peel and the Ministry of Environment, Conservation and Parks (MECP), set out sound level limits for both the indoor (transportation sources only) and outdoor spaces (both transportation and stationary sources).

Using road traffic data obtained from the Region of Peel, and traffic consultants, Paradigm and Crozier, the predicted sound levels for various locations in the development were determined. Sound levels due to the adjacent roads were determined using ORNAMENT, the noise prediction model of the MECP.

The results of the road traffic noise predictions were used to determine the required mitigation measures to address the transportation noise sources. With appropriate mitigative measures, all residential lots and blocks (units) in the development are predicted to meet the noise guidelines. Where minor excesses exist or mitigation is required, future occupants will be advised through the use of warning clauses.

Certain blocks (units) in close proximity to Highway 50 require central air conditioning whereas some other lots and blocks (units) require forced air heating systems sized to accommodate central air conditioning at a later date if noise becomes a concern. Table 3 and Figure 2 show the central air conditioning requirements.

For blocks (units) with rear yards exposed to Highway 50 an acoustic barrier is required to mitigate the rear yard amenity areas. For blocks (units) / lots flanking or exposed to Street 1 and, Street 2, an acoustical barrier is required to mitigate the rear yard amenity areas. See text for details.

Based on the preliminary analysis, upgraded exterior window and exterior door construction above the requirements typically satisfied by standard construction practices will not be needed in the development. Prior to issuance of building permits, the acoustical requirements should be reviewed based on the final plans to ensure compliance with the applicable guidelines. Prior to final occupancy, the dwelling units should be inspected by an acoustical consultant to ensure the required mitigation measures have been incorporated.

There are existing commercial and industrial uses in the vicinity of the subject site. The analysis of the noise sources associated with these stationary source developments was based on information collected by Jade Acoustics Inc. during our site visit, publicly available information and information from other Jade files for comparable facilities. These existing commercial and industrial uses have been investigated and are not expected to affect the feasibility of development at the subject site. The long-term development plans for the lands on which the commercial and industrial operations are situated are not known. It is our understanding from the secondary plan land use designations, that the commercial and industrial lands will ultimately be redeveloped, thereby making the impact of the stationary noise sources associated with the commercial and industrial sources temporary in nature.

The proposed development was evaluated using the MECP noise criteria for stationary sources applicable to both Class 1 and Class 4 areas. Sound level compliance from the stationary noise sources associated with the commercial and industrial uses is predicted to achieve the Class 1 sound level compliance at many, but not all, of the proposed low-rise development. For these other units, Class 4 sound level compliance at units in the proposed low-rise development is predicted. See Section 5.2 for details. A proximity warning clause will be required for all residential units in proximity to the commercial and industrial uses to address the existing stationary sources.

Currently, the proposed site is considered to be a Class 1 area; therefore, the land use planning authority would need to approve the new classification based on the noise analysis and incorporate a Class 4 designation in an appropriate planning tool or alternate planning document, as determined by the Town.

The Class 4 designation would not be required to be applied to all dwelling units in the proposed development, but only those in proximity to the stationary noise sources. Mandatory central air conditioning and updated façade construction are also required for Class 4 designated dwellings. See Table 3 for a summary of acoustical requirements.

1.0 INTRODUCTION

Jade Acoustics Inc. has been retained by the proponent to prepare a Preliminary Environmental Noise Report to investigate the potential noise impact of transportation and stationary sources on the proposed development to the satisfaction of the Town of Caledon and the Region of Peel.

The proposed site is identified as:

Draft Plan of Subdivision
Part of Lot 13, Concession 7
Town of Caledon
Regional Municipality of Peel

Surrounding land uses are existing/future residential and existing commercial/industrial uses.

The analysis was based on:

- Draft Plan of Subdivision prepared by KLM Planning, dated August 28, 2026, received on September 3, 2026;
- Bolton North Hill Tertiary Plan and information prepared by Bousfield Inc., provided by proponent, received on March 26, 2026;
- Draft Transportation Impact Study prepared by Paradigm Transportation Solutions Limited, dated August 2026, received on August 19, 2026;
- Road traffic information provided by the Region of Peel on February 2 and August 20, 2026; and
- A site visit conducted by Jade Acoustics Inc. on January 29, 2026.

A Key Plan is attached as Figure 1.

Figure 2 shows the proposed residential development which includes single detached dwellings, standard townhouse dwellings, dual frontage townhouse dwellings, a park block, a school block, natural heritage system blocks, future development blocks, and stormwater management blocks.

Single detached dwellings with a maximum height of two (2) storeys, and standard and dual frontage townhouse dwellings with a maximum height of three (3) storeys have been considered in this report.

Where available on the draft plan of subdivision the building footprint information was used in the assessment. It is expected that the details of building footprint will be provided at a future submission stage and the noise report will be updated accordingly.

2.0 NOISE SOURCES

2.1 Transportation Sources

The proposed development is subject to road traffic noise from Highway 50, Emil Kolb Parkway and the proposed internal collector roads (Streets 1, 2, and 3).

The Town of Caledon (Development Standards Manual, Version 5.0, 2019) requires that when assessing the road traffic noise impact on planned sensitive land uses, a forecast of twenty (20) years should be applied.

The future total 2051 road traffic information for Highway 50 and proposed internal collector roads was obtained from the Transportation Assessment Update report prepared by Crozier Consulting Engineers noted in Section 1.0 and has been used for the noise analysis. The Future Total 2051 Traffic volumes provided for Highway 50 were compared to the ultimate traffic information provided by the Region of Peel. The higher traffic volumes which are the Future Total 2051 traffic volumes were used with the assumption that the greater of the AM or PM peak volumes considered to represent 10% of the overall 24-hour volume.

Additionally, the truck percentages and day/night traffic split for Highway 50 provided by Region of Peel was used in the analysis. One percent (1%) medium truck and 1% heavy truck as well as a day/night traffic split of 90/10 have been assumed for the proposed internal roads (Streets 1, 2 and 3) and used in the analysis.

The posted speed limit for Highway 50 and Emil Kolb Parkway was confirmed based on the site visit and the posted speed limit for Streets 1, 2, and 3 were established based on the traffic studies noted in Section 1.0. The Town of Caledon (Development Standards Manual, Version 5.0, 2019) requires that when assessing the road traffic noise impact on planned sensitive land uses, a traffic speed of 10 km/h over the posted speed must be used. The posted speed limits, as noted in Table 1 of this report, were increased by 10 km/h and used in the calculations to satisfy the Town's requirements.

Road traffic information is summarized in Table 1. Correspondence regarding the road traffic information is included in Appendix A.

This site is not impacted by rail or aircraft traffic.

2.2 Stationary Sources

There are existing commercial and industrial uses to the general south and west. These developments are listed below and shown in Figure 1 (Key Plan).

West of Highway 50 and South of Emil Kolb Parkway (west of subject site)

- James Dick Construction Bolton office and yard.

East of Highway 50 and South of Emil Kolb Parkway (southwest of subject site)

- Mike the Mechanic – Auto repair shop.
- Tiger Tire Sales and Service – Auto repair shop.
- Esso Gas Station.

The stationary noise sources mentioned above were identified based on separation distances, types of uses, and observations during the site visit on January 29, 2026 by Jade Acoustics Inc. Contact with James Dick Construction was attempted but no responses were received at the time of completion of this noise report. Contact with other facilities was not made at this time. Information obtained from the site visit and Jade Acoustics files for similar facilities have been used in the preparation of the acoustic model. These facilities are further addressed in Section 4.2 and are shown in Figure 1 (Key Plan).

It is important to note that, based on the Bolton Hill North Tertiary Plan referenced in Section 1.0, all of the facilities noted above except for the Town of Caledon Public Works Yard and the school shown in Figure 1 (both well southeast of the proposed development) are anticipated to be re-developed to residential in the future. As the nature of the future re-development of these uses are unknown at this time, only the existing stationary noise sources were evaluated in this report. The status of these future re-developments should be investigated in the Detailed Environmental Noise Report and any mitigation measures (if required) should be re-evaluated.

Additionally, a future mixed-use development is proposed in the northeast quadrant of Highway 50 and Columbia Way. Based on publicly available information, the only potential noise sources associated with this development are expected to be rooftop mechanical equipment serving the future towers. Sound level compliance is required at the noise sensitive receptors within the development site, which will ensure that sound level compliance is also achieved at the proposed noise sensitive receptors within the subject site, as they are located further away. Therefore, the future mixed-use development was not discussed further in this report. The status of this development should be confirmed at the time of preparation of the Detailed Environmental Noise Report.

3.0 ENVIRONMENTAL NOISE CRITERIA

In addition to the Town of Caledon “Development Standards Manual (Version 5.0), dated 2019” and the “General Guidelines for the Preparation of Acoustical Reports in the Region of Peel” document dated November 2012, updated August 2020, the most recent environmental noise guidelines (NPC-300) of the Ontario Ministry of the Environment, Conservation and Parks (MECP) were used for this report.

A brief summary of the NPC-300 guidelines is given in Appendix B. The guidelines are also summarized below (with consideration of the Region of Peel and Town of Caledon guidelines included as well).

3.1 Road Traffic

3.1.1 Indoors

If the nighttime (11:00 p.m. to 7:00 a.m.) sound level in terms of Leq at the exterior face of a bedroom or living/dining room window is 60 dBA or greater and/or if the daytime (7:00 a.m. to 11:00 p.m.) sound level in terms of Leq at the exterior face of a bedroom or living/dining room window is greater than 65 dBA, means must be provided so that windows can be kept closed for noise control purposes and central air conditioning is required. For nighttime sound levels (LeqNight) greater than 50 dBA to less than 60 dBA on the exterior face of a bedroom or living/dining room window or daytime sound levels (LeqDay) greater than 55 dBA to less than or equal to 65 dBA on the exterior face of a bedroom or living/dining room window, there need only be the provision for adding central air conditioning by the occupant at a later date. This typically involves a ducted heating system sized to accommodate the addition of central air conditioning by the occupant at a later date. A warning clause advising the occupant of the potential interference with some activities is also required.

In all cases, the air-cooled condenser units must not exceed an AHRI sound rating of 7.6 bels. The air-cooled condenser units must be sited in accordance with the zoning by-laws with respect to setbacks as well as location.

As required by the Town of Caledon, Region of Peel and MECP, indoor noise criteria for road traffic noise are 40 dBA (Leq8hour) for the bedrooms during nighttime hours, 45 dBA (Leq8hour) for living/dining rooms during nighttime hours and 45 dBA (Leq16hour) for the living/dining rooms and bedrooms during daytime hours. These criteria are used to determine the architectural requirements.

3.1.2 Outdoors

For the outdoor amenity areas, a design goal of 55 dBA daytime (7:00 a.m. to 11:00 p.m.) sound level is used for road traffic with an excess not exceeding 5 dBA considered acceptable in some cases. Where the unmitigated sound level during the day exceeds 55 dBA but is less than 60 dBA, a warning clause is required and mitigation should be considered. Where the daytime sound level during the day exceeds 60 dBA, mitigation and a warning clause are required.

Based on the “General Guidelines for the Preparation of Acoustic Reports in the Region of Peel”, the sound level in outdoor living areas after applying attenuation measures should be the lowest aesthetically, technically and administratively practical level. The sound level objective is 55 dBA (LeqDay). If the sound level objective is exceeded, the report needs to provide a table of comparative sound barrier heights and show the height required to attenuate the noise to the MECP standards.

The Town of Caledon does not accept sound levels in outdoor living areas in excess of 55 dBA (LeqDay), unless design features exceed standard detail. In addition, the Town requires that, when assessing the road traffic impact on planned sensitive land uses, a traffic speed of 10 km/h over the posted speed be used. Traffic volumes must be based on future traffic projections (minimum 20 years) or the ultimate road traffic volumes (ultimate capacity) as determined by the road authority.

The Region of Peel generally requires that an acoustic fence does not exceed 2.0 m in height. The maximum acoustic fence height acceptable to the Region of Peel and the Town of Caledon is 2.4 m.

The definition of outdoor amenity area as defined by the MECP is given below.

“Outdoor Living Area (OLA)

(applies to impact assessments of transportation sources) means that part of a noise sensitive land use that is:

- Intended and designed for the quiet enjoyment of the outdoor environment; and
- Readily accessible from the building.

The OLA includes:

- Backyards, front yards, gardens, terraces or patios;

- Balconies and elevated terraces (e.g. rooftops), with a minimum depth of 4 metres, that are not enclosed, provided they are the only outdoor living area (OLA) for the occupant; or
- Common outdoor living areas (OLAs) associated with high-rise multi-unit buildings.”

For both indoor and outdoor conditions, where the acoustic criteria are exceeded, warning clauses must be placed in offers of purchase and sale or lease agreements and in the subdivision agreement.

3.2 Stationary Sources

The guidelines of the MECP for stationary sources are to be used for the commercial/industrial/institutional facilities.

The MECP document NPC-300 titled “Environmental Noise Guideline Stationary and Transportation Sources – Approval and Planning” has been used in this assessment.

The MECP also has vibration guidelines with respect to stationary sources, NPC-207. These guidelines require that the peak vibration velocities not exceed 0.3 mm/s at the point of reception during the day or night.

The MECP recognizes the need for back-up beepers/alarms as safety devices and as such does not have any guidelines or criteria to address these sources.

It should be noted that the MECP guidelines do not require that the source be inaudible, but rather that specific sound level limits be achieved.

With respect to stationary sources of noise in urban areas, the MECP guidelines require that the sound level due to the stationary source at the building façade and outdoor amenity spaces not exceed the sound level due to road traffic and in certain situations due to rail traffic in any hour of source operation, subject to specific exclusions. Tables C-5, C-6, C-7 and C-8 of NPC-300, included in Appendix B, provide the exclusion limit values of one-hour equivalent sound level (Leq, dBA) and impulsive sound level (L_{IM}, dBAI).

In addition, the MECP guidelines require that most industries have a valid Environmental Compliance Approval (ECA) or its precursor, a Certificate of Approval (C of A) to operate.

In general, if the criteria for a stationary source of noise are exceeded, the MECP recommends that control be implemented at the source rather than at the receiver. Alternatively, if the receiver

is set back from the source or if a physical barrier is constructed so that the criteria can be met at the receiver, no additional mitigation measures are required. Treatment of the receptor building by the use of suitable wall and window construction and central air conditioning to keep windows closed is not an acceptable solution to the MECP in Class 1 and 2 areas (urban). In addition, a warning clause in offers of purchase and sale and/or lease agreement noting the proximity of dwellings to such a source should be considered.

Based on the NPC-300 document, Class 4 Areas can only be established in Class 1 or 2 Areas in proximity to existing, lawfully established and approved stationary sources. This is not applicable in areas with existing noise sensitive land use(s) unless they are redeveloped/rezoned/replaced with new noise sensitive land use(s). Classification of a Class 4 Area is subject to formal confirmation from the land use planning authority and continues as long as the stationary source(s) can potentially operate.

Class 4 does not exempt the evaluation of the noise impact of the noise sources associated with the proposed development on the noise sensitive receptors within the proposed buildings.

Sound level limits for Class 4 Area shown in Tables C-5, C-6, C-7 and C-8 assume closed windows together with a ventilation system which is, in most situations, central air conditioning.

4.0 NOISE IMPACT ASSESSMENT

As required by the MECP, Region of Peel, and Town of Caledon guidelines, the transportation sources and stationary sources were assessed independently.

4.1 Transportation Sources

For road traffic noise the sound level in terms of Leq, the energy equivalent continuous sound level for both day (LeqDay, 16 hours) and night (LeqNight, 8 hours) was determined using ORNAMENT, the Traffic Noise Prediction Model of the MECP.

Table 2 provides a summary of predicted sound levels outdoor due to road traffic at specific locations without any mitigative measures. Appendix C includes sample calculations. The topography between the source and the receiver has been taken into account. The rear yard receiver was assumed to be 3 m from the middle of the rear wall of the house. The façade receiver location has been taken at 4.5 m above grade for two-storey dwellings and at 7.5 m above grade for three-storey dwellings. The analysis accounts for screening from the proposed dwellings themselves within the subject site as well existing building structures (as applicable).

With the absence of building envelope information for some dwellings, at this current stage, the analysis was based on the assumed setback information summarized below:

For Dual Frontage Townhouses:

- Rear yard setback of 4.7 m;
- Exterior side yard setback of 2.0 m; and
- Front yard setback of 2.5 m.

For Standard Townhouses:

- Rear yard setback of 5.5 m;
- Exterior side yard setback of 2.5 m; and
- Front yard setback of 5.5 m.

The Draft Plan of Subdivision referenced in Section 1.0, was used in the analysis.

The Dual Frontage Townhouse dwellings are not proposed to have an outdoor amenity space as defined the MECP that is required to be acoustically protected. Therefore, no calculations were prepared for amenity spaces associated with these buildings.

For Block 246 fronting Highway 50, the unmitigated sound levels at the front wall are predicted to be 66 dBA (daytime) and 59 dBA (nighttime).

For Block 214 (West Unit) which is flanking Highway 50 and lies north of the SWM pond, the unmitigated sound levels at the side wall are predicted to be 63 dBA (daytime) and 56 dBA (nighttime). The unmitigated sound level in the rear yard is predicted to be 59 dBA (daytime).

For Block 211 which is reverse fronting Highway 50 and lies east of the SWM pond, the unmitigated sound levels at the rear wall are predicted to be 56 dBA (daytime) and 49 dBA (nighttime). The unmitigated sound level in the rear yard is predicted to be 56 dBA (daytime).

For Block 249 (West Unit) fronting onto Street 1 with full exposure to Emil Kolb Parkway and Street 1, the unmitigated sound levels at the front wall are predicted to be 70 dBA (daytime) and 66 dBA (nighttime).

For Block 251 fronting onto Street 1, the unmitigated sound levels at the front wall are predicted to be 60 dBA (daytime) and 53 dBA (nighttime).

For Block 3 (South Unit) which is exposed to Street 1, the unmitigated sound levels at the side wall are predicted to be 57 dBA (daytime) and 51 dBA (nighttime). The unmitigated sound level in the rear yard is predicted to be 58 dBA (daytime).

For Block 238 (East Unit) flanking Street 2, the unmitigated sound levels at the side wall are predicted to be 57 dBA (daytime) and 51 dBA (nighttime). The unmitigated sound level in the rear yard is predicted to be 55 dBA (daytime).

For Lot 201 which flanks Street 2, the unmitigated sound level in the rear yard is predicted to be 56 dBA (daytime).

For Block 224 (North Unit) flanking Street 3, the unmitigated sound levels at the side wall are predicted to be 58 dBA (daytime) and 51 dBA (nighttime). The unmitigated sound level in the rear yard is predicted to be 53 dBA (daytime).

Where the sound level limits are predicted to be exceeded, mitigative measures and warning clauses are required.

To note here and as mentioned throughout the report, it is expected that the confirmation of building footprint locations will be provided at a future submission stage and the noise report will be updated accordingly.

4.2 Stationary Sources

As noted in Section 2.2, the noise sources and approach to the preliminary modelling of external noise sources are based on the information collected through the previous site investigations and information from Jade Acoustics Inc. files, unless otherwise specifically noted.

Traffic counts obtained from the Peel Region were used to predict ambient sound levels at the existing and proposed residential buildings due to vehicle activity on Highway 50. As the ambient sound levels predicted during the quietest hours at many noise-sensitive receptors exceed the MECP exclusion sound level limits for the Class 1 area in some locations, the elevated ambient sound levels were considered applicable for the noise analysis, as warranted. Where the predicted ambient sound levels do not exceed the applicable exclusion sound level limits of the MECP, the applicable exclusion limits have been used. Therefore, the predicted sound levels due to the stationary sources were compared with the MECP exclusion sound level limits of 50 dBA (daytime and evening hours) and 45 dBA (nighttime hours) only where warranted; otherwise, the predicted ambient sound levels were regarded as the applicable sound level limits to assess compliance with the Class 1 requirements. See Figure 3 for the predicted ambient sound levels at the building façades during the quietest hour in the daytime period. Appendix C includes information regarding the noise sources modelled and associated sound power levels.

It should be noted that ambient sound levels during evening and nighttime periods were not used since the unmitigated sound levels predicted were below the Class 1 sound level limits during the evening and nighttime periods.

James Dick Construction Ltd.

In the absence of information provided directly by the facility, publicly available information was used to prepare the noise analysis. According to the James Dick Construction Company website, the subject facility operates as the Bolton Yard and office. The site is not identified as a licensed gravel pit or quarry as per their website. A review of the Pits and Quarries registry on the Ministry of Natural Resources website indicates that this facility is not registered as a pit or quarry. In addition, based on a review of the Ministry of the Environment, Conservation and Parks (MECP) website, there is no Environmental Compliance Approval (ECA) or Environmental Activity and Sector Registry (EASR) associated with the Bolton Yard. Based on this information, the Bolton Yard and office are assumed to be used for material storage and distribution purposes only, and no major crushing, extraction, or screening operations are anticipated.

Based on publicly available information, the facility operates during the daytime period from 7:00 a.m. to 5:00 p.m. Trucks carrying processed materials enter the Bolton Yard through the weight scale at the entrance. Based on site observations, trucks travel within the yard and drive up to the top of the berm to unload materials.

It was assumed that the unloaded materials are subsequently re-handled by front end loaders and fed into a screening unit, transferred via conveyor to a portable stacker, and placed into stockpiles. It was further assumed that the same trucks then proceed to the bins to be loaded with new materials by front end loaders before exiting the yard through another weight scale. Materials from the stockpiles are assumed to be periodically transferred to the bins by loaders. In addition, it is assumed that some trucks travel to the maintenance shop located at the southern portion of the yard for general maintenance or repair activities. No crushing operations or coupling/uncoupling activities were assumed.

In the absence of site-specific operational data, truck volumes and equipment duty cycles associated with yard operations were conservatively assumed based on the premise that the facility must maintain compliance with Class 1 sound level limits, or alternatively, elevated ambient sound levels due to traffic along Highway 50, at existing residential receptors along Highway 50. On this basis, the potential noise impact from the facility was assessed by assuming maximum reasonable sound emissions that would still comply with either Class 1 sound level limits or elevated ambient sound levels at the closest existing residential receptors.

In summary, the noise sources associated with James Dick Construction Bolton Yard and office include the following:

- An aggregate truck route with twenty (20) trucks per hour during daytime hours, with trucks entering through the north gate, travelling to the top of the berm, passing through the bins area, and exiting through the south gate.
- An aggregate truck route with five (5) trucks per hour during daytime hours, with trucks entering through the south gate to access the maintenance shop and then exiting the site.
- Fifteen (15) trucks idling at the weight scale near the north gate for up to two (2) minutes, in accordance with the Town's idling by-law.
- Ten (10) trucks idling at the weight scale near the south gate for up to two (2) minutes, in accordance with the Town's idling by-law.
- One (1) truck idling at the bins area for sixty (60) minutes while materials are being loaded.

- One (1) front end loader operating at the stockpiles area for sorting materials for sixty (60) minutes.
- One (1) front end loader operating at the bins area for sixty (60) minutes.
- One (1) front end loader moving materials from the stockpiles to the bins for sixty (60) minutes.
- One (1) screening conveyor operating for sixty (60) minutes.
- One (1) screening unit operating for sixty (60) minutes.
- One (1) portable stacker operating for sixty (60) minutes.
- One (1) diesel generator operating for sixty (60) minutes.
- One (1) HVAC unit located on the roof of the office building with duty cycles of 100% during the daytime, 70% during the evening, and 45% during the nighttime.
- One (1) exhaust fan located on the roof of the maintenance building with a duty cycle of 100% during daytime hours.
- Two (2) automotive service bay doors on the north façade of the maintenance building, each assumed to be open for thirty (30) minutes during daytime hours.

Impulsive noise associated with this facility is not expected.

Auto repair shops and Esso gas station located east of Highway 50 and south of Emil Kolb Parkway

Based on site observations and publicly available information, the auto repair shops operate during daytime period only. Rooftop HVAC units (such as heat/cool units and exhaust fans), air compressors associated with tire inflation at the gas stations, and auto service activity noise through auto service bay doors were analyzed.

Impulsive noise associated with these facilities are not expected.

Appendix D includes information regarding the noise sources modelled, associated sound power levels and duty cycles used in the calculations.

Back-up beepers associated with trucks and forklifts are exempt from the MECP guidelines as they are safety devices; therefore, they were not included in the analysis.

Figure 4 shows the location of the stationary source developments and noise sources analyzed.

The unmitigated sound levels in terms of one-hour Leq were calculated for the façades (and relevant outdoor amenity areas) of the worst-case proposed receptors using the CadnaA 2025MR1 computer program, which uses International Standard Analytical Code ISO 9613-2 (1996).

Figure 5 shows the predicted unmitigated sound levels due to continuous stationary noise sources at the worst-case building façades associated with the proposed dwellings.

Figures 6A and 6B show the predicted sound level exceedance due to continuous noise sources during the daytime and nighttime hours over the MECP Class 1 exclusion sound level limits or predicted ambient sound levels at the worst-case noise sensitive receptors within the proposed development. As can be seen from Figure 6A and 6B, an exceedance is predicted and, mitigation measures are required to address the stationary noise sources.

Figures 7A and 7B show the predicted sound level exceedance due to continuous noise sources during the daytime and nighttime hours over the MECP Class 4 exclusion sound level limits or predicted ambient sound levels at the worst-case noise sensitive receptors within the proposed development. As can be seen from Figures 7A and 7B, an exceedance is not predicted over the Class 4 exclusions sound level limits, therefore physical mitigation measures are not required if Class 4 designation is included within impacted blocks.

5.0 NOISE ABATEMENT MEASURES

The required noise abatement measures for the proposed development are provided below.

5.1 Road Traffic

5.1.1 Indoors

The indoor noise exposure criteria for road traffic can be achieved in all cases by using appropriate architectural elements for exterior wall, window and exterior door construction. The indoor criteria for road traffic noise are 40 dBA (Leq8hour) for the bedrooms during nighttime hours, 45 dBA (Leq8hour) for the living/dining rooms during nighttime hours and 45 (Leq16hour) for the living/dining rooms and bedrooms during daytime hours. The characteristic spectrum for the noise sources has been accounted for in the determination of the architectural components.

In determining the architectural requirements, for the units adjacent to the roadways, it is assumed that a bedroom will be located on the upper floor of the dwelling and the worst case would involve a corner bedroom during daytime hours because the day/night traffic split results in more than 5 dBA difference between the predicted daytime and nighttime sound levels. This noted difference is more than the difference between the MECP indoor criteria for road traffic for daytime and nighttime hours; therefore, a corner bedroom with calculated daytime sound level was used for the analysis. The worst-case location would be a townhouse immediately adjacent to Highway 50. The exterior walls and windows were assumed to be 55% and 25%, respectively, of the associated floor area for both the wall perpendicular and the wall parallel to the roadway.

Sample architectural component selection calculations are shown in Appendix E.

For the worst-case location, exterior walls having an STC 35 rating and windows and exterior doors having an STC 27 rating would be needed. The required construction is achieved by standard construction complying with the minimum structural and safety requirements of standard construction.

The acoustical performance of a window and an exterior door as a whole depend on glass configuration/thickness, air space, material used for frames and construction alone expressed as a sound transmission class (STC) rating, generally available in the literature, does not address the STC rating of the whole window. Glass configuration with different frame materials and/or construction details often produces different STC ratings. Therefore, it is recommended that prior to installation, the window manufacturers provide proof (STC test results of window configuration from an accredited laboratory) that their windows meet the required STC ratings.

Since house plans are not yet available, the final architectural choices cannot be made. Once house plans are available, the noise control requirements should be re-evaluated.

Where the sound level is equal to or greater than 60 dBA (LeqNight) or greater than 65 dBA (LeqDay) on the outside face of a bedroom or living/dining room window, the indoor noise criteria would not be met with open windows and provisions must be made to permit the windows to remain closed. In this case, the MECP guidelines require central air conditioning and a warning clause. Based on the predicted sound levels, certain dwellings will require central air conditioning. See Table 3, Notes to Table 3 and Figure 2 for details.

Where the nighttime sound level (Leq8hour) is greater than 50 dBA to less than 60 dBA and the daytime sound level (Leq16hour) is greater than 55 dBA to less than or equal to 65 dBA, the provision for adding central air conditioning by the occupants must be made. Based on the predicted sound levels, certain lots and blocks (units) in proximity to the road sources require the provision for adding central air conditioning by the occupant and a warning clause. See Table 3, Notes to Table 3 and Figure 2 for details.

The outdoor air conditioning condensing units must meet the applicable sound limits and be sited in accordance with the Town's zoning by-laws.

Warning clauses will also be required to be placed in offers of purchase and sale or lease agreements and in the subdivision agreement for all relevant residential lots and blocks (units) to make future occupants aware of the potential noise situation.

5.1.2 Outdoor Living Areas and Sound Barriers

The outdoor amenity area is required to be exposed to a sound level of less than or equal to 55 dBA during the day. A 5 dBA increase is considered acceptable in certain situations. Typically, if the sound level is above 55 dBA, some form of mitigation and a warning clause is required.

For Block 214 (all units), a 2.4 m high acoustic fence is proposed to achieve a predicted rear yard sound level of 55 dBA. The acoustic fence should be returned to the side wall of the western units.

Blocks 209 to 213 (all units) are predicted to have a rear yard unmitigated sound level of greater than 55 dBA but less than 60 dBA. This is within the allowable 5 dBA exceedance over the 55 dBA design criteria but is subject to approval by the Town of Caledon. The proponent of the development feels that having no barriers on these units would be desirable and would assist with lot drainage.

For all lots/ blocks (units) flanking Street 2, a 2.0 m high acoustic fence is proposed to be installed along the side property lines. The acoustic fence should be returned to the side wall of the respective units. The mitigated sound levels in the rear yards of these lots and blocks (units) are predicted to be less than 55 dBA.

For Block 3 (all units) with exposure to Street 1, a 2.0 m high acoustic fence is proposed to be installed along the rear property line and returning along the side wall of the western unit to a point in line with the rear wall of the dwelling.

For future development blocks, no calculations were prepared as final dwelling designs were not known.

The location and height of the required acoustic barriers are shown on Figure 2. Sample calculations of the sound barrier analysis are included as Appendix F.

Generally, if a sound barrier is to be used, the sound barrier may be a fence, made of any one or a combination of various materials, berm, or a berm/fence combination. The sound barrier should be of continuous construction, with no gaps and should have a minimum surface density of 20 kg/m² or more. Appropriate treatment of the sound barrier at all discontinuities and points of termination would be required to ensure that the sound barrier is effective. This would involve extending the barrier to the front property line; returning to the side wall of the house or extending the sound barrier for a minimum of three times the distance between the side wall and the sound barrier, past the rear wall of the house. An acoustic gate of 20 kg/m² is very heavy. Therefore, if a gate is required, provided that it is of continuous construction with no gaps between the boards, it may have a surface density of between 10 kg/m² and 20 kg/m². In addition, any gaps at the bottom of the gate should be kept to a minimal height.

Gaps at the bottom of the acoustic fence are discouraged. If drainage gaps are necessary, special design techniques to create interrupted line of sight under the acoustic fence are required.

Where an excess will remain or where mitigation is required, a warning clause should be placed in offers of purchase and sale agreements and included in the subdivision agreement.

5.2 Stationary Sources

As discussed in Section 4.2, based on the stationary noise source review, noise from the stationary source developments in the close proximity is predicted to exceed the MECP stationary source guidelines for a Class 1 area and/or predicted ambient sound levels at the proposed noise sensitive receptors associated with the proposed development; therefore, mitigation measures for some blocks (units) are required in order to address the nearby

stationary sources. To note for completeness, the predicted sound levels at other proposed noise sensitive receptors associated with the development are predicted to be within the Class 1 sound level limits and/or ambient sound levels and as such no mitigation measures are required for some of the dwelling units with respect to stationary noise.

Physical mitigation measures to address the stationary noise sources would include local acoustic barrier, enclosures or quieters units. For these physical mitigation measure to be effective, they would need to be installed in close proximity to the stationary noise source and would require the co-operations of the commercial/industrial operations. Based on the nonresponse from the James Dick facility, the investigation into the feasibility of these mitigation options is not feasible.

Additionally, the implementation of such barriers may limit the feasibility of future modifications to the existing non-residential operations, as these operations could be required to incorporate additional noise mitigation measures, to achieve sound level compliance at the proposed noise sensitive receptors as well as other existing noise sensitive receptors, that may constrain their design or functionality. Establishing a Class 4 designation for the proposed development, which would be the closest noise sensitive receptors to the stationary sources in the area and would also serve as a barrier providing shielding for the internal residential unit, would provide greater flexibility to both existing and potential future non-residential developments. By allowing a higher sound level limit for compliance, the need for additional mitigation measures that could compromise the feasibility of these operations can be avoided. The Class 4 designation thus enables the proposed residential development to proceed without requiring additional physical noise mitigation, while also supporting balanced land use planning through the continued coexistence of residential and industrial/commercial activities in the area.

The long-term development plans of the commercial and industrial lands that contain the stationary noise sources reviewed, it not known at this time, but there is the expectation that the redevelopment of some or all of these lands may occur. This is also another supporting reason for why the use of the Class 4 designation on this land would allow the proposed development to proceed.

As discussed in Section 4.2, noise mitigation measures to address the stationary noise sources are not required. Due to their proximity to the existing stationary source developments, some of the proposed dwelling units should be provided with a proximity warning clause notifying the purchasers/tenants that the activities and/or equipment associated with the stationary source developments may at times be audible. See Table 3, Notes to Table 3 and Figure 2 for details.

Many of the stationary sources discussed in Section 4.2 are located within the secondary plan boundary area and are expected to be redevelopment in the future, therefore making them temporary in nature until this redevelopment occurs.

Based on the above considerations and Class 4 sound level limits can be achieved without the need for physical mitigation, the installation of a local acoustical barrier is considered economically impractical. Therefore, a Class 4 designation is recommended for the proposed development. For completeness, it is noted that Class 1 sound level compliance can be achieved for a large portion of the site, and thus the Class 4 designation is only proposed for dwelling units with exposure to the stationary sources. Due to the uncertainty regarding some of the assumed noise source locations, a consistent approach to implementing the Class 4 designation across the site had been proposed, as opposed to just selecting individual blocks requiring Class 4.

A Class 4 designation can be used for new sensitive land uses adjacent to lawfully established stationary sources if approved by the municipality. Mandatory central air conditioning and a warning clause would also be required to satisfy the Class 4 requirements, these recommended warning clauses are included in the notes to Table 3. In addition, all residential dwellings required to have Class 4 designation are recommended by the MECP to have upgraded façade requirements incorporated into the dwelling designs.

Currently, the proposed site is considered to be a Class 1 area; therefore, the land use planning authority would need to approve the new classification based on the noise analysis and incorporate Class 4 designation in an appropriate planning tool or alternate planning document, as determined by the Town that remains registered, as approved by the Town of Caledon.

6.0

CONCLUSIONS AND RECOMMENDATIONS

Based on the preliminary analysis, with the incorporation of the appropriate noise mitigation measures, it is feasible to develop these lands for the proposed residential development and achieve the MECP NPC-300 noise guidelines for Class 4 at the critical receptor locations (and Class 1 elsewhere). See Table 3, Notes to Table 3, and Figure 2. In accordance with the City and Ministry implementation guidelines, where mitigation is required, future occupants will be advised through the use of warning clauses.

As detailed in Section 5.2, it is our understanding from the secondary plan land use designations, that the adjacent industrial and commercial lands will ultimately be redeveloped, thereby making the impact of the stationary noise sources associated with the commercial and industrial sources temporary in nature.

Once the final draft plan, architectural plans, and grading plans become available, a detailed environmental noise report should be prepared to ensure that the applicable noise guidelines can be achieved. Should additional or updated information on that neighbouring stationary noise sources be made available, the acoustical modelling will be updated at the time of completion of the detailed environmental noise report.

Prior to the issuance of building permits, the architectural plans should be reviewed by an acoustical engineer to ensure compliance with the applicable guidelines.

Prior to final occupancy, the lots and blocks (units) should be inspected by an acoustical engineer to ensure the required mitigative measures have been incorporated.

Respectfully submitted,

JADE ACOUSTICS INC.

Per: 
Chris B. Kellar, P.Eng.



CAM/CK/jg
L:\Reports\26-004-01 Sep 8-26 14475 Highway 50 (PENR).docx

7.0 STATEMENT OF LIMITATIONS

This document has been prepared by Jade Acoustics Inc. (Jade) for the client identified on the cover page, exclusively for the agreed-upon purpose set out in the report. The information used in the preparation of this report should not be used in whole or in part for any other project without written authorization from Jade. Copying or distribution of this document (or excerpts of this document), except by the intended client, is not permitted without the express written consent of Jade.

Jade accepts no responsibility for any liability, loss, or damages suffered by any third party which uses the information, results or conclusions in this report. Jade acknowledges that this report may be provided to the relevant regulatory authorities as part of the approvals process.

The material in this report reflects Jade's professional judgment based on the information available to Jade at the time of preparing this report. The recommendations and conclusions in this report are based on the information provided at the time of the preparation of this report, as detailed within the report. The client should review the information used in the preparation of the report to ensure that it is accurate.

Jade assumes that information provided by third parties is accurate and without error unless it is manifestly incorrect. Jade is not responsible for updating the report to reflect changes to information subsequent to the production of this report which may affect the conclusions and recommendations in the report unless explicitly instructed by the client.

Jade is not qualified to advise with respect to any matters not related to acoustics. Jade is not liable for any failure to implement the recommendations outlined in the report or resulting repercussions.

8.0

REFERENCES

1. "Model Municipal Noise Control By-Law", Final Report, Ontario Ministry of the Environment, August, 1978.
2. ORNAMENT – "Ontario Road Noise Analysis Method for Environment and Transportation", Ontario Ministry of the Environment, October, 1989.
3. "Building Practice Note No. 56: Controlling Sound Transmission into Buildings", J.D. Quirt, Division of Building Research, National Research Council of Canada, September, 1985.
4. "Environmental Noise Guideline Stationary and Transportation Sources – Approval and Planning", Ontario Ministry of the Environment, Publication NPC-300, August, 2013, released October 21, 2013 (updated final version # 22).
5. "General Guidelines for the Preparation of Acoustical Reports in the Region of Peel", November 2012, updated August 2020.
6. "Development Standards Manual", Town of Caledon, Version 5.0, 2019.
7. "Impulse Vibration in Residential Buildings", Ontario Ministry of Environment, Publication NPC-207 (Draft), November, 1983.

TABLE 1
PROPOSED RESIDENTIAL DEVELOPMENT
14475 HIGHWAY 50
TOWN OF CALEDON

SUMMARY OF ROAD TRAFFIC INFORMATION

A. ROAD TRAFFIC

ROAD	HIGHWAY 50	EMIL KOLB PARKWAY	STREET 1	STREET 2	STREET 3
AADT*	21,810 (2051)	16,200	5,090 (2051)	3,490 (2051)	2,310 (2051)
No. of Lanes	2	2	2	2	2
Posted Speed (km/h)+10km/h	70	80	60	60	60
Medium Trucks (%)**	4.4% (4.5%)	5.6% (7.4%)	1%***	1%***	1%***
Heavy Trucks (%)**	1.6% (0.9%)	6.8%/ 9.4%)	1%***	1%***	1%***
Day/Night Split (%)	90/10	87/13	90/10***	90/10***	90/10***

* Ultimate AADT: Annual Average Daily Traffic.

** Daytime (Nighttime).

*** Assumed

TABLE 2
PROPOSED RESIDENTIAL DEVELOPMENT
14475 HIGHWAY 50
TOWN OF CALEDON

PREDICTED UNMITIGATED SOUND LEVELS
OUTDOORS DUE TO ROAD TRAFFIC*

Lots/Blocks (Units)*	Location**	Source	Leq (dBA)*			
			Day Combined	Day Combined	Night Separate	Night Combined
Block 251	Front Wall	Street 1	60	--	53	--
Block 249	Front Wall	Emil Kolb Parkway	70	70	65	66
		Street 1	62		56	
Block 246	Front Wall	Highway 50	66	--	59	--
Block 238	Rear Yard	Street 2	55	--	--	--
	Side Wall		57	--	51	--
Block 224	Rear Yard	Street 3	53	--	--	--
	Side Wall		58	--	51	--
Block 214	Rear Yard	Highway 50	59	--	--	--
	Side Wall		63	--	56	--
Block 211	Rear Yard	Highway 50	56	--	--	--
	Side Wall		56	--	49	--
Lot 201	Rear Yard	Street 2	56	--	--	--
Block 3	Rear Yard	Street 1	58	--	--	--
	Side Wall		57	--	51	--

* See Figure 2.

** Rear yard location taken 3 m from rear wall and 1.5 m above grade. Wall location taken 4.5 m above grade for second floor, or 7.5 m above grade for third floor.

TABLE 3
PROPOSED RESIDENTIAL DEVELOPMENT
14475 HIGHWAY 50
TOWN OF CALEDON

SUMMARY OF MINIMUM NOISE ABATEMENT MEASURES

Lots/Blocks (units)	Air Conditioning^{(1)*}	Exterior Wall^{(2)*}	Window^{(2)*}	Sound Barrier⁽³⁾	Warning Clause⁽⁴⁾
Block 214 (all units)	Mandatory	Upgraded	Upgraded	2.4 m**	A, B, D, E, F
Blocks 209 to 213 (all units), Block 217 (all units), Blocks 224 to 226 (all units), Block 229 (all units), Block 230 (all units), Block 235 (all units), Block 236 (all units), Block 241 (all units), Blocks 244 to 249 (all units) and Block 256 (all units)	Mandatory	Upgraded	Upgraded	No	A, B, E, F
Lots 12, 13, 24, 25, 62, 63, 201, 186, 185, 166, 165, 138, 137, 104, Block 3 (all units), Block 205 (eastern unit), Block 215 (eastern unit), Block 219 (eastern unit), Block 221 (eastern unit), Block 222 (eastern unit), Block 227 (eastern unit), Block 232 (eastern unit), Block 233 (eastern unit), Block 238 (eastern unit), Block 239 (eastern unit), Block 242 (eastern unit),	Provision for Adding	Standard	Standard	2.0 m	A, C, D

* Based on preliminary calculations. See Section 5.1.1 for details.

** See text for details. A 2.4 m high acoustic fence is proposed to achieve higher than the design goal of 55 dBA.

Warning Clause would be required as a condition of the Class 4 designation.

TABLE 3 - CONTINUED
PROPOSED RESIDENTIAL DEVELOPMENT
14475 HIGHWAY 50
TOWN OF CALEDON

SUMMARY OF MINIMUM NOISE ABATEMENT MEASURES

Lots/Blocks (units)	Air Conditioning ^{(1)*}	Exterior Wall ^{(2)*}	Window ^{(2)*}	Sound Barrier ⁽³⁾	Warning Clause ⁽⁴⁾
Block 1 (all units), Block 2 (all units), Blocks 4 to 6 (all units), Block 216 (all units), Block 218 (all units), Block 223 (all units) Block 228 (all units) Blocks 250 to 255 (all units), Block 242 (all units except east unit), Block 239 (all units except east unit), Block 238 (all units except east unit), Block 233 (all units except east unit), Block 232 (all units except east unit), Block 227 (all units except east unit), Block 222 (all units except east unit), Block 221 (all units except east unit), Block 219 (all units except east unit), Block 215 (all units except east unit), Block 205 (all units except east unit), and Blocks 202 and 204 (all units)	Provision for Adding	Standard	Standard	No	A, C
All other lots and blocks (units)	No Special Requirements				

* Based on preliminary calculations. See Section 5.1.1 for details.

** See text for details. A 2.4 m high acoustic fence is proposed to achieve higher than the design goal of 55 dBA.

Warning Clause would be required as a condition of the Class 4 designation.

See Notes to Table 3 on following pages. See Section 5.2 for discussions regarding the Class 4 designation to address stationary noise sources.

NOTES TO TABLE 3

1. Means must be provided to allow windows to remain closed for noise control purposes. Installation of central air conditioning is required. The air-cooled condenser unit should be placed in a noise insensitive location which complies with municipal by-laws. For condensing units, the AHRI sound rating must not exceed 7.6 bels.

Provision for adding central air conditioning would involve a ducted heating system sized to accommodate the addition of central air conditioning by the occupant at a later date. The air-cooled condenser unit should be placed in a noise insensitive location which complies with municipal by-laws. It is recommended that the air-cooled condenser unit AHRI sound rating does not exceed 7.6 bels.

2. STC – Sound Transmission Class Rating (Reference ASTM-E413). Values shown are based on preliminary calculations using standard assumptions. See text for details. A sliding glass walkout door should be considered as a window and be included in the percentage of glazing.

3. Suggested warning clauses to be included in the subdivision and/or condominium agreement and to be included in offers of purchase and sale or lease agreements for the dwelling unit in the designated building and/or blocks (units):

A. "Purchasers are advised that despite the inclusion of noise control features in this development area and within the dwelling units, noise due to increasing road traffic may continue to be of concern, occasionally interfering with the activities of the occupants as the sound levels may exceed the noise criteria of the municipality and the Ontario Ministry of the Environment, Conservation and Parks. I, the purchaser hereby, agree to place this clause in all subsequent offers of purchase and sale when I sell the property."

B. "Purchasers and/or tenants are advised that the dwelling unit has been or will be fitted with a central air conditioning system which will enable occupants to keep windows and exterior doors closed if road traffic noise interferes with their indoor activities (Note: locate air cooled condenser unit in a noise insensitive area and as required by municipal by-laws, and ensure that the unit has an AHRI sound rating not exceeding 7.6 bels)."

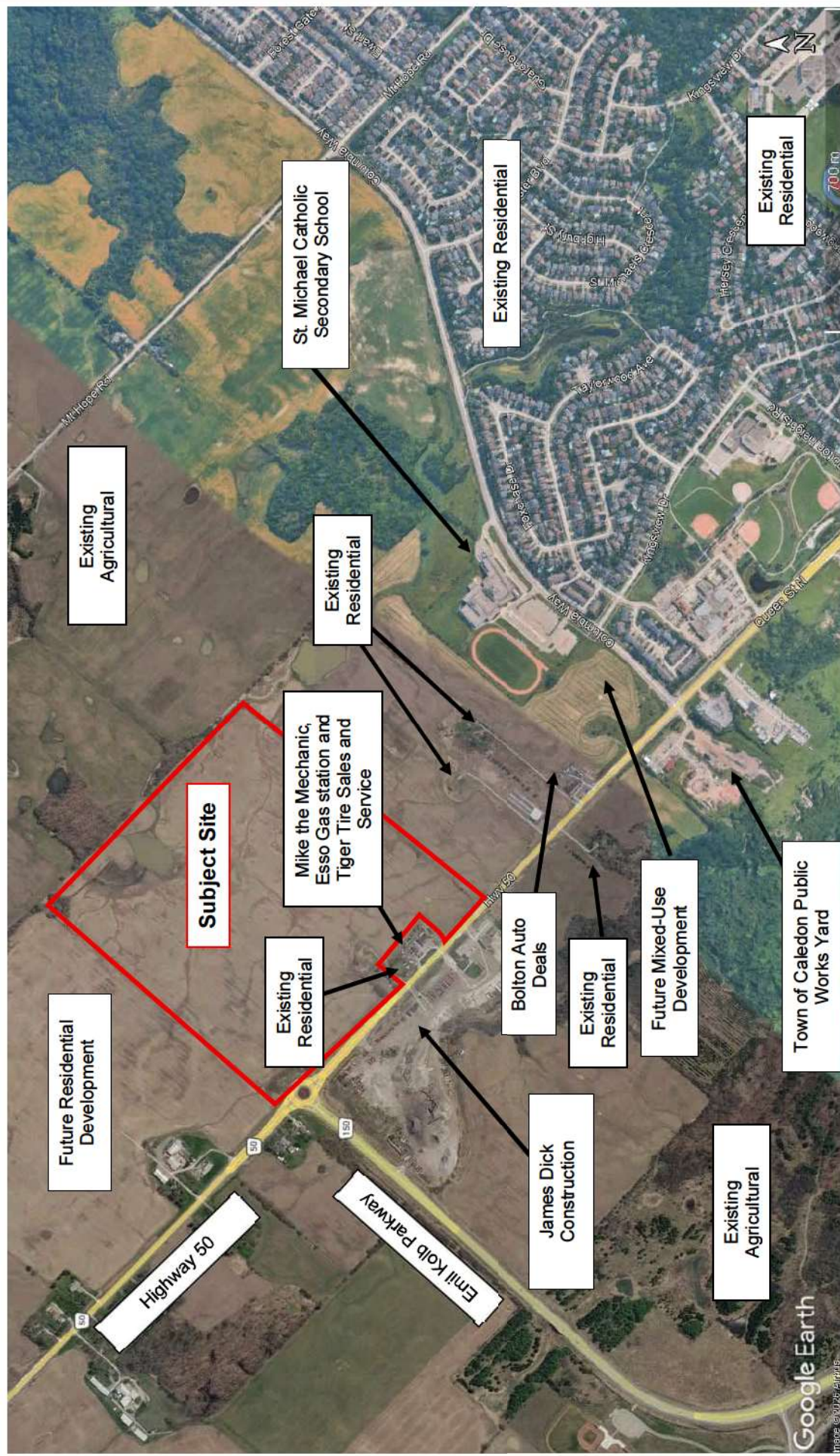
C. "Purchasers are advised that the dwelling unit can be fitted with a central air conditioning system at the owner's option and expense which will enable occupants to keep windows closed if road traffic noise interferes with the indoor activities. If central air conditioning is installed, the air-cooled condenser unit shall have a sound rating not exceeding 7.6 bels and shall be located so as to have the least possible noise impact on outdoor activities of the occupants and their neighbours."

D. "Purchasers are advised that the acoustical berm and/or barrier as installed shall be maintained, repaired or replaced by the owner. Any maintenance repair or replacement shall be with the same material, to the same standards, and having the same colour and appearance of the original."

E. "Purchasers/tenants are advised that due to the proximity of the adjacent stationary source developments, noise from these developments may at times be audible."

F. "Purchasers/tenants are advised that sound levels due to the adjacent stationary source developments are required to comply with sound level limits that are protective of indoor areas and are based on the assumption that windows and exterior doors are closed. This dwelling unit has been supplied with a central air conditioning system which will allow windows and exterior doors to remain closed. The residential area has been designated Class 4 as defined by the Ministry of the Environment, Conservation and Parks guidelines."

4. Conventional ventilated attic roof construction meeting typical construction practices is satisfactory in all cases.



N.T.S.



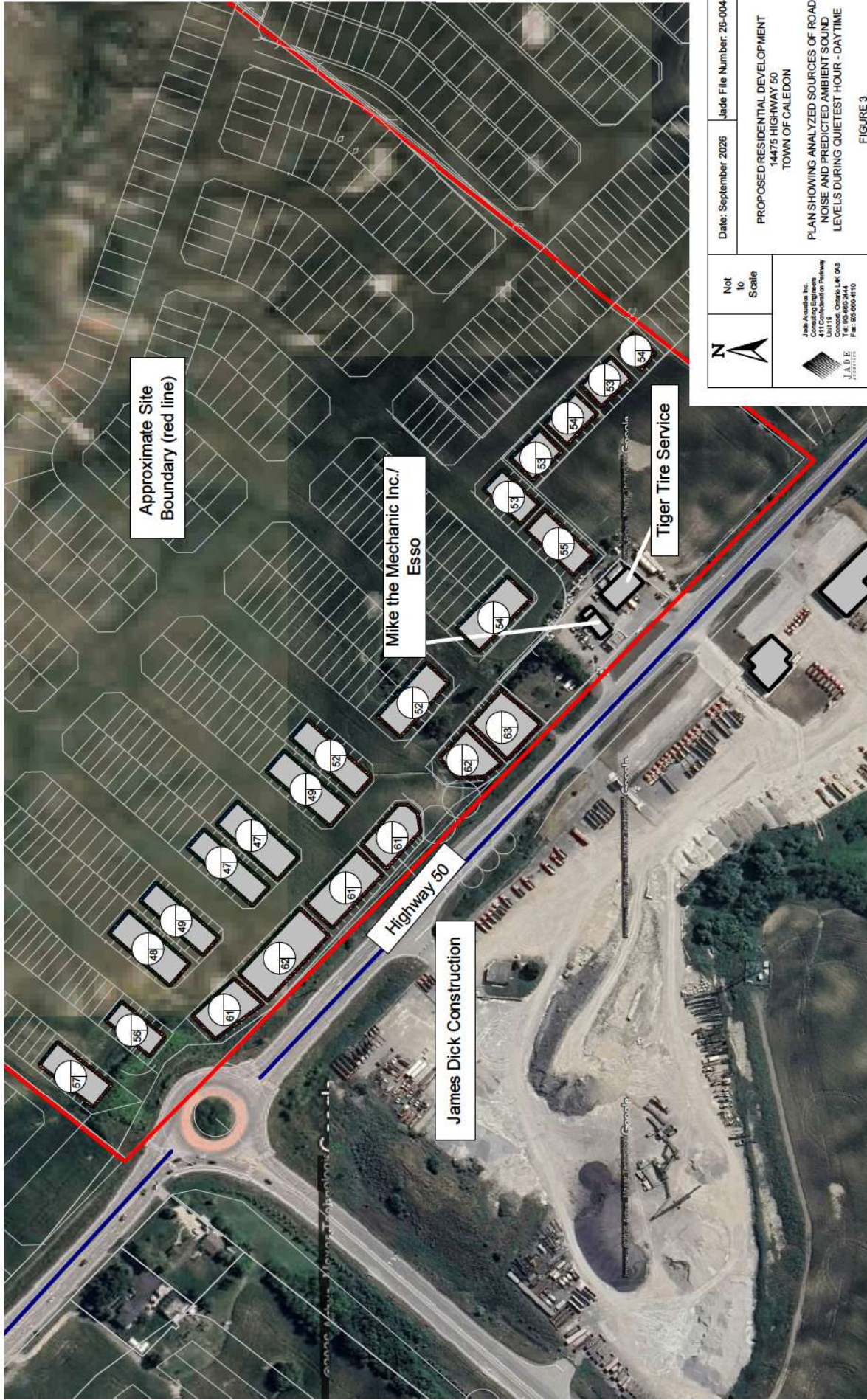
KEY PLAN

FIGURE 1

**Proposed Residential Development
14475 Highway 50
Town of Caledon**

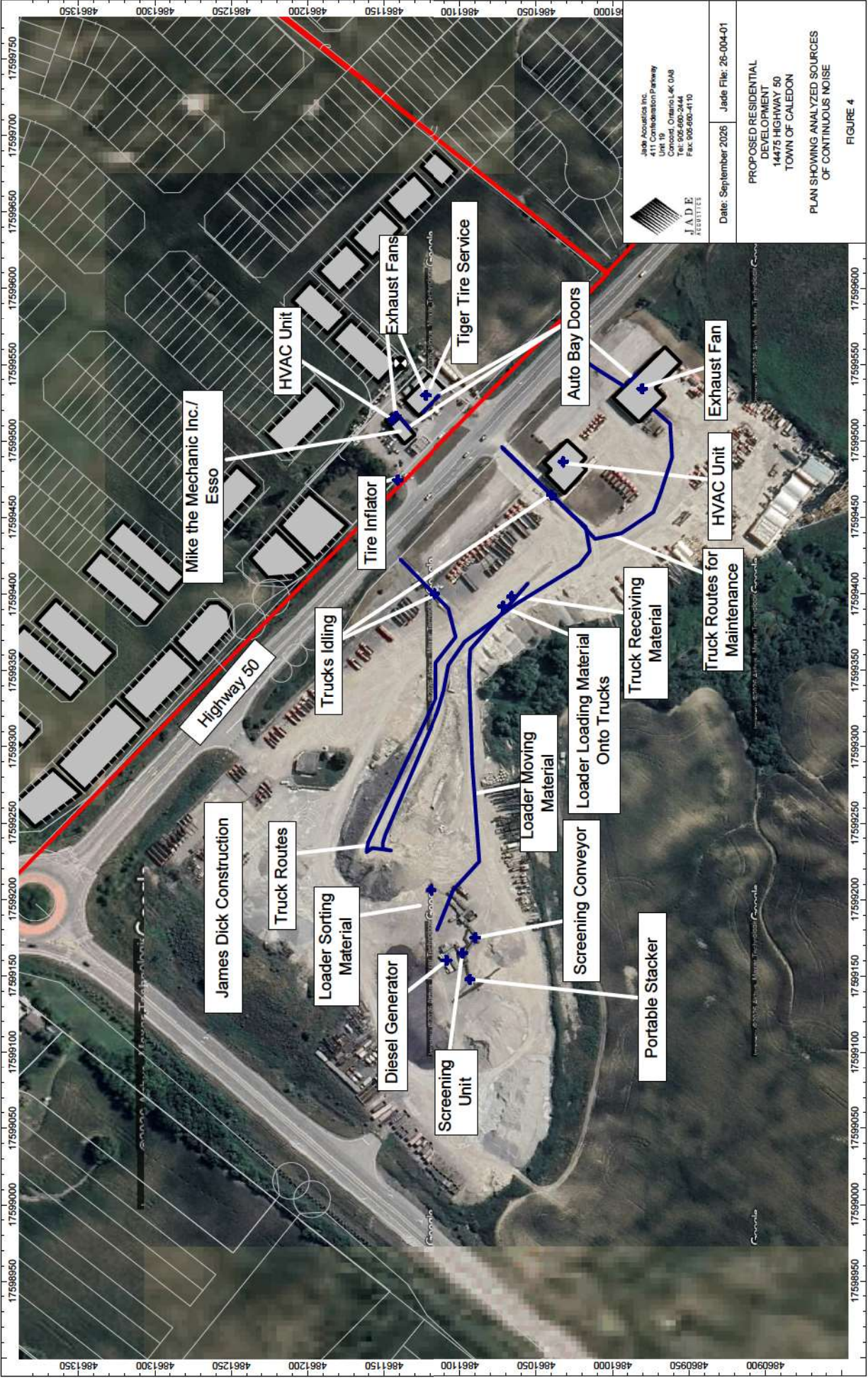
Date: September 2026
File: 26-004-01





	Not to Scale	Date: September 2026 Jade File Number: 26-004-01
	PROPOSED RESIDENTIAL DEVELOPMENT 14475 HIGHWAY 50 TOWN OF CALEDON	
PLAN SHOWING ANALYZED SOURCES OF ROAD NOISE AND PREDICTED AMBIENT SOUND LEVELS DURING QUIETEST HOUR - DAYTIME		
Jade Acoustics Inc. 411 Confederation Parkway Unit 18 Oakville, ON L6K 0A8 Tel: 905-900-3444 Fax: 905-900-8110		

FIGURE 3



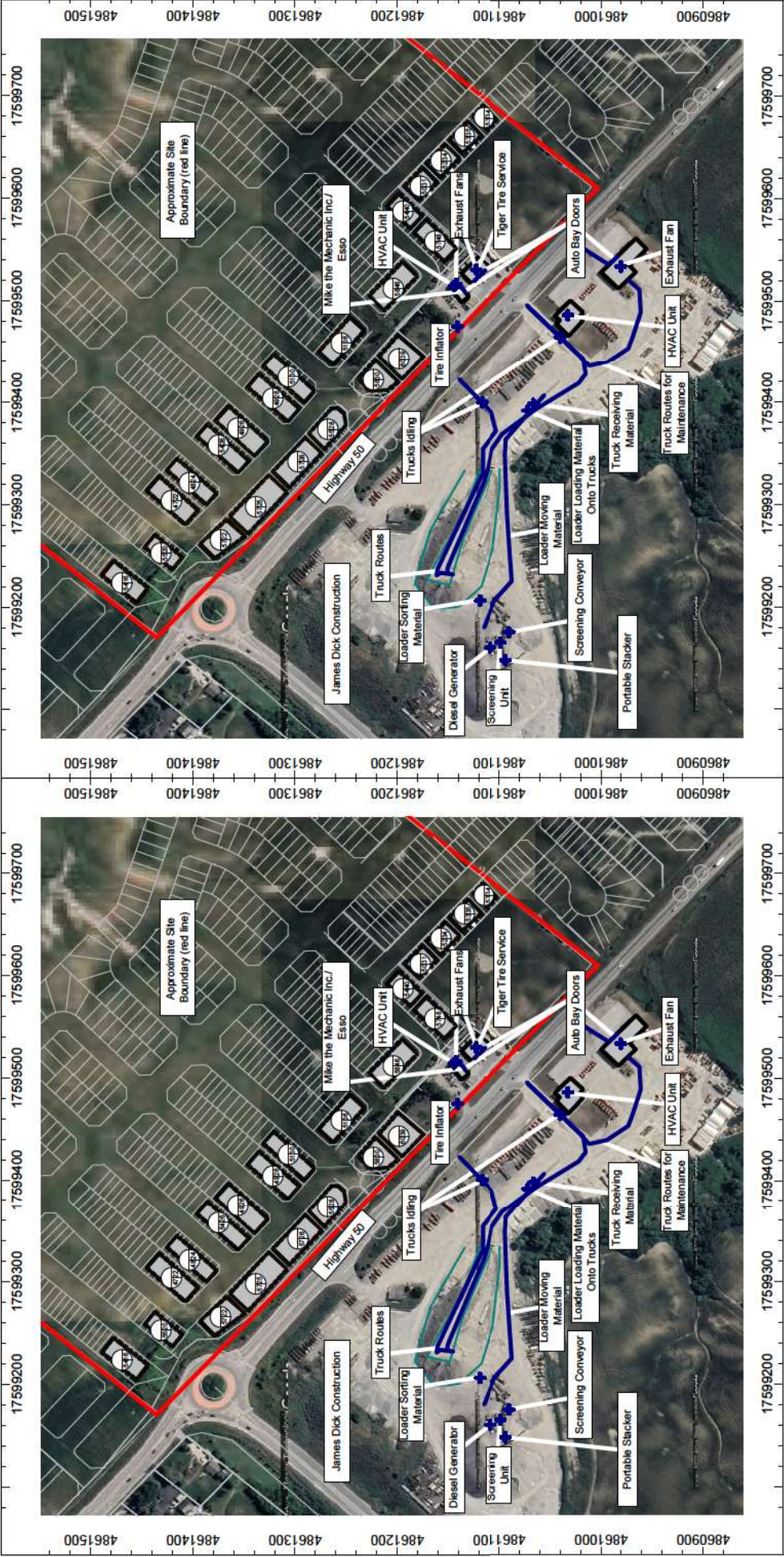
Jade Acoustics Inc.
411 Confederation Parkway
Unit 19, Oranoro, L4C 0A8
Canada
Tel: 905-660-2444
Fax: 905-660-4110

J.A.D.E.
ACOUSTICS

Date: September 2026 Jade File: 26-004-01

PROPOSED RESIDENTIAL
DEVELOPMENT
14475 HIGHWAY 50
TOWN OF CALEDON
PLAN SHOWING ANALYZED SOURCES
OF CONTINUOUS NOISE

FIGURE 4



PROPOSED RESIDENTIAL DEVELOPMENT
14475 HIGHWAY 50
TOWN OF CALEDON

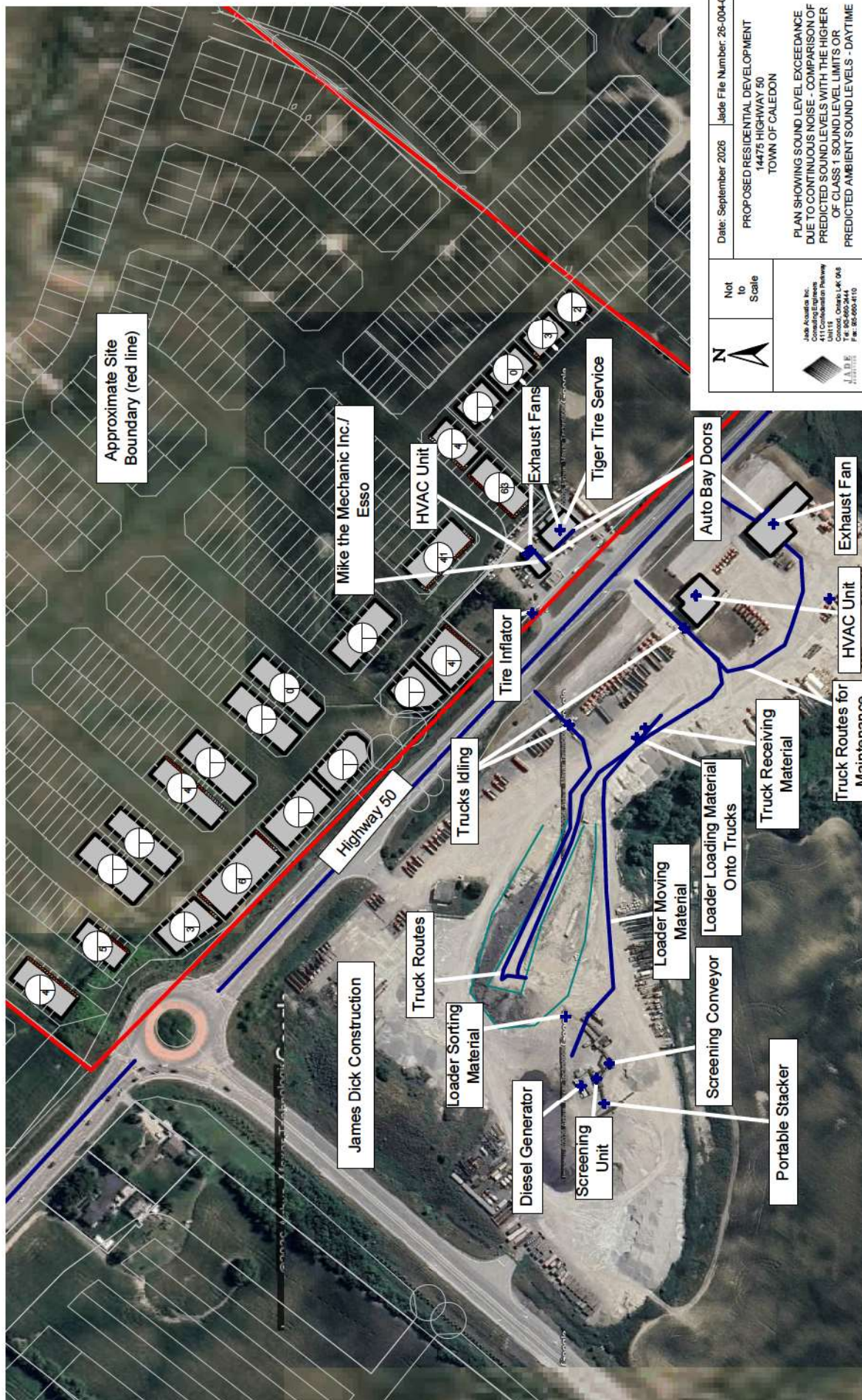
PLAN SHOWING PREDICTED SOUND LEVELS
DUE TO CONTINUOUS NOISE
WITHOUT MITIGATION MEASURES

FIGURE 5

Date: September 2026

Jade File: 26-004-01





Date: September 2026	Jade File Number: 26-004-01
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Not

Z.

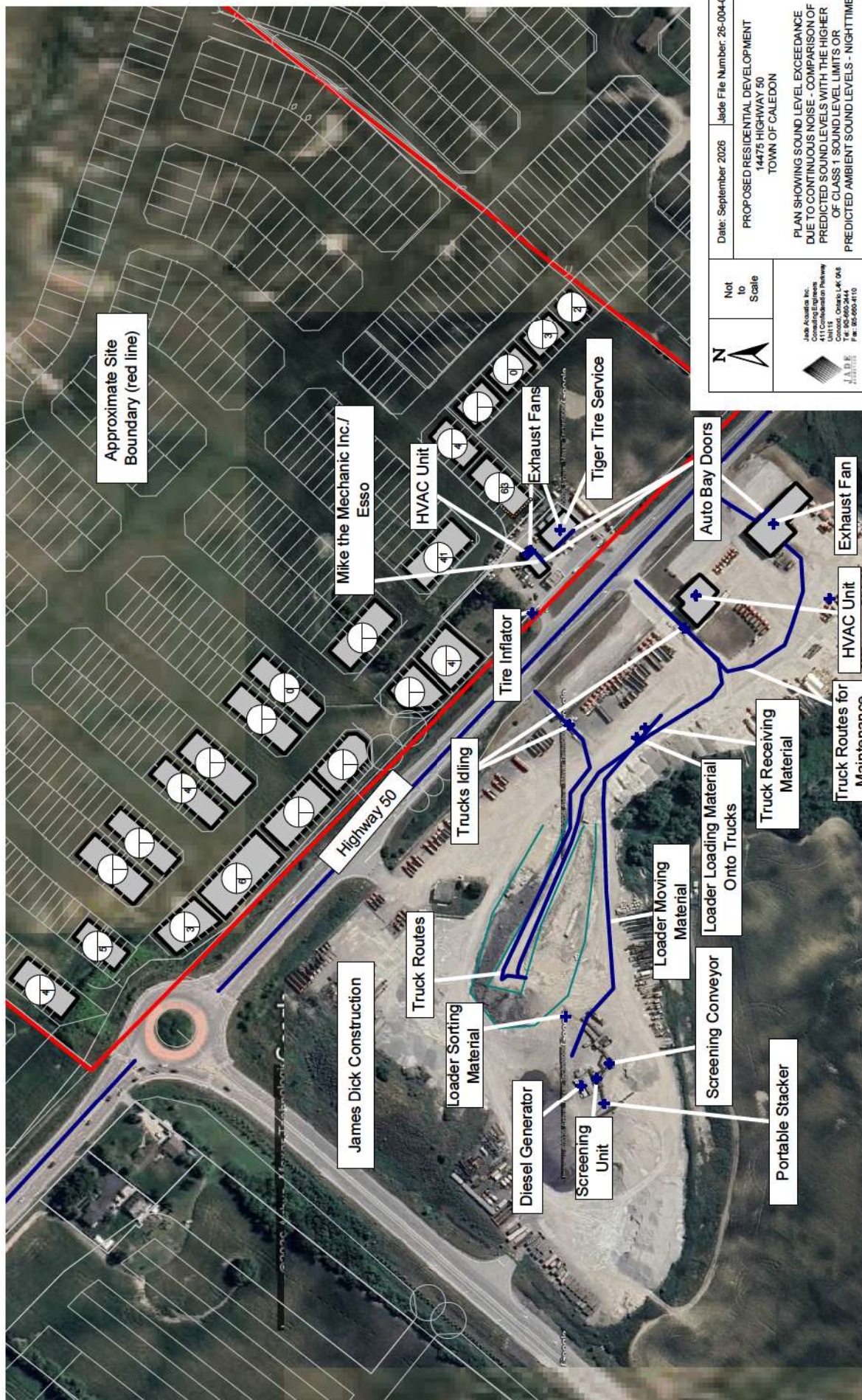
Jade File Number: 26-004-01

PROPOSED RESIDENTIAL DEVELOPMENT
14475 HIGHWAY 50
TOWN OF CALEDON

PLAN SHOWING SOUND LEVEL EXCEEDANCE
DUE TO CONTINUOUS NOISE - COMPARISON OF
PREDICTED SOUND LEVELS WITH THE HIGHER
OF CLASS 1 SOUND LEVEL LIMITS OR
PREDICTED AMBIENT SOUND LEVELS - DAYTIME

JACO ACOUSTICS INC.
Consulting Engineers
411 Confederation Parkway
Unit 19
Concord, Ontario L4K 6A8
Tel: 905-660-2444
Fax: 905-660-4110

FIGURE 6A



Date: September 2026	Jade File Number: 26-004-01
----------------------	-----------------------------

Not

Z.

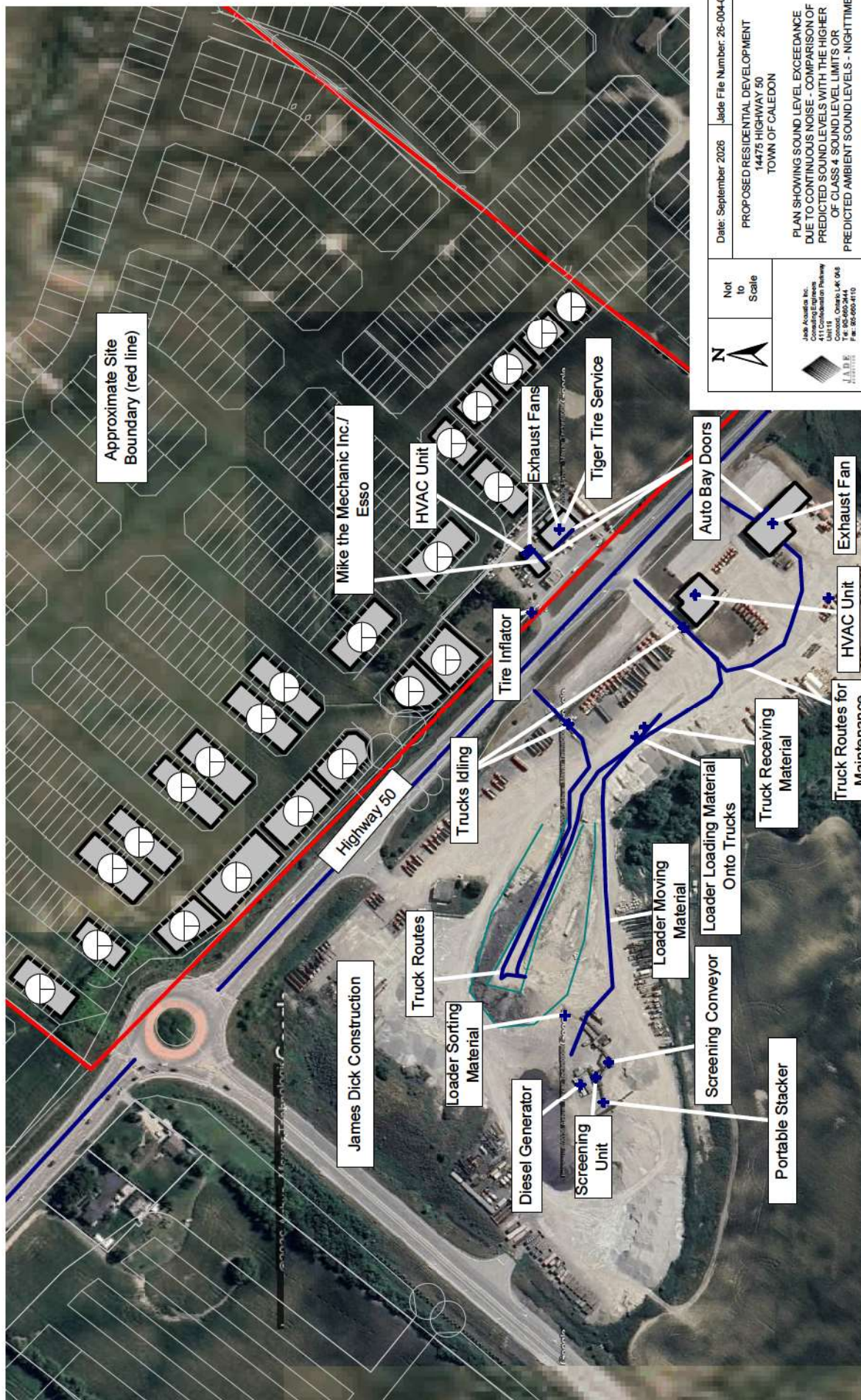
Jade File Number: 26-004-01

PROPOSED RESIDENTIAL DEVELOPMENT
14475 HIGHWAY 50
TOWN OF CALEDON

PLAN SHOWING SOUND LEVEL EXCEEDANCE
DUE TO CONTINUOUS NOISE - COMPARISON OF
PREDICTED SOUND LEVELS WITH THE HIGHER
OF CLASS 1 SOUND LEVEL LIMITS OR
PREDICTED AMBIENT SOUND LEVELS - NIGHTTIME

Jade Acoustics Inc.
Consulting Engineers
411 Confederation Parkway
Unit 19
Concord, Ontario L4K 0L8
Tel: 905-660-2444
Fax: 905-660-4110

FIGURE 6B



Date: September 2026	Jade File Number: 26-004-01
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11

Z

Jade File Number: 26-004-01

PROPOSED RESIDENTIAL DEVELOPMENT
14475 HIGHWAY 50
TOWN OF CALEDON

PLAN SHOWING SOUND LEVEL EXCEEDANCE
DUE TO CONTINUOUS NOISE - COMPARISON OF
PREDICTED SOUND LEVELS WITH THE HIGHER
OF CLASS 4 SOUND LEVEL LIMITS OR
PREDICTED AMBIENT SOUND LEVELS - NIGHTTIME

JADE Acoustics Inc.
Consulting Engineers
411 Confederation Parkway
Unit 19
Concord, Ontario L4K 0A8
Tel: 905-860-2444
Fax: 905-860-4110

FIGURE 7B

APPENDIX A

CORRESPONDENCE REGARDING ROAD TRAFFIC DATA

Alvin Chan

From: Marchesan, Luciano <Luciano.Marchesan@peelregion.ca>
Sent: January 28, 2026 3:22 PM
To: Jake Chong
Cc: Jay, Robert; ZYG-Transportation Planning Data; Sinka, Nathan
Subject: Re: Traffic information - Highway 50 - JAI File: 26-004
Attachments: Highway 50 between Emil Kolb Parkway and Columbia Way.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Good Afternoon Jake,

I hope this email finds you well. Please see the attached PDF, which summarizes the requested information relating to your noise study along Highway 50 between Columbia Way and Emil Kolb Parkway.

For access to specific ATR counts, please connect with [@Sinka, Nathan](#), who I have CC'ed in this email.

Please let me know if you have any questions or concerns about the requested data, as I would be happy to help.

Best Regards,



Luciano Marchesan, EIT
Transportation Data and Modelling Analyst
Transportation Policy & Modelling
Transportation Division
Public Works

luciano.marchesan@peelregion.ca
+1 289-305-4323



Our working hours may be different. Please do not feel obligated to reply outside of your working hours. Let's work together to help foster healthy work-life boundaries.

Peel Region is situated on the Treaty Lands and Territory of the Mississaugas of the Credit First Nation as well as the traditional territory of the Anishinabek, Huron-Wendat and Haudenosaunee peoples.

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From: Jake Chong <jake@jadeacoustics.com>
Sent: January 28, 2026 12:58 PM
To: ZYG-Transportation Planning Data <transportationplanningdata@peelregion.ca>
Cc: Jay, Robert <robert.jay@peelregion.ca>
Subject: Traffic information - Highway 50 - JAI File: 26-004

Some people who received this message don't often get email from jake@jadeacoustics.com. [Learn why this is important](#)

Date: January 28, 2026
Requestor: Jake Chong, Jade Acoustics
Request Type: Noise Traffic Data Request
Location: Hwy 50 - 600m South of Emil Kolb Parkway

Jake Chong,

As per your request, please see below traffic data from 2024:

	Existing	Ultimate
24 Hour Traffic Volume	11998	16200
# of Lanes	2	2
Day/Night Split	90/10	90/10
Day Trucks (% of Total Volume)	4.4% Medium 1.6% Heavy	4.4% Medium 1.6% Heavy
Night Trucks (% of Total Volume)	4.5% Medium 0.9% Heavy	4.5% Medium 0.9% Heavy
Right-of-Way Width	36 meters	
Posted Speed Limit	60 km/h	

Note:

1. The current volume is not the Annual Average Daily Traffic, but the averaged raw volumes over three data collection days. For Annual Average Traffic Volume, visit the Peel Open Data website below:
<https://data.peelregion.ca/datasets/RegionofPeel::traffic-count-stations/explore>
2. The ultimate volume is the planned volume during a level of service 'D' where a 2 second vehicle headway and a volume to capacity ratio of 0.9 is assumed. Traffic signals and hourly variations in traffic are also incorporated into the ultimate volume.

If you require further assistance, please contact me at transportationplanningdata@peelregion.ca

Regards,

Luciano Marchesan

Transportation Data & Modelling Analyst,
Transportation Policy & Modelling
Transportation Division | Public Works | Region of Peel
10 Peel Centre Drive, Suite B, 4th Floor

Alvin Chan

From: scrimi.scland@gmail.com
Sent: March 26, 2026 2:45 PM
To: Jake Chong; 'Tim Edmondson'
Cc: Alvin Chan; Chris Kellar; 'William Lewis'; Alyssa Woods
Subject: RE: James Dick <> Jade Acoustics (JAI file: 26-004/26-004-01)
Attachments: Transportation Study.pdf

Attached is Traffic the study.

Local study by Paradigm.

Group study by Crozier.

This is the like.

<https://we.tl/t-QTFs9X6ckqWp3naF>

link expires on March 29th

Sal Crimi, P.Eng.
S.C. Land Management Corporation
Cell: (416) 833-7374

Please note: I am out of the office on Friday's

From: Jake Chong <jake@jadeacoustics.com>
Sent: March 26, 2026 2:30 PM
To: scrimi.scland@gmail.com; Tim Edmondson <TEdmondson@dsel.ca>
Cc: Alvin Chan <alvin@jadeacoustics.com>; Chris Kellar <chris@jadeacoustics.com>; 'William Lewis' <williamlewisrealestate@gmail.com>
Subject: RE: James Dick <> Jade Acoustics (JAI file: 26-004/26-004-01)

Sal,

Sorry for the second email. Please also provide me the contact information for the retained traffic consultant. I will reach out to them for the traffic information as well as the traffic impact study, mainly for the traffic data for the proposed internal roadways.

We already obtained traffic data for Hwy 50 from Peel Region. FYI.

Thanks.

Regards,

Wai Lung (Jake) Chong, P.Eng.

Jade Acoustics Inc.
411 Confederation Parkway, Unit 19
Concord, Ontario
L4K 0A8

TRANSPORTATION ASSESSMENT UPDATE

**BOLTON NORTH HILL
OPTION 1 & OPTION 2 LANDS**

**TOWN OF CALEDON
REGION OF PEEL**

**PREPARED FOR:
BOLTON NORTH HILL
LANDOWNERS GROUP INC.**

**PREPARED BY:
C.F. CROZIER & ASSOCIATES INC.
2800 HIGH POINT DRIVE, SUITE 100
MILTON, ON
L9T 6P4**

**ORIGINAL: OCTOBER 2020
RESUBMISSION: FEBRUARY 2026**

CFCA FILE NO. 708-3446

The material in this report reflects best judgment in light of the information available at the time of preparation. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibilities of such third parties. C.F. Crozier & Associates Inc. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.



Date: August 20, 2026
Requestor: Chris Kellar, Jade Acoustics Inc.
Request Type: Noise Traffic Data Request
Location: Emil Kolb Parkway - 500m West of the Highway 50 / Emil Kolb Parkway Roundabout

Chris Kellar,

As per your request, please see below traffic data from 2025:

	Existing	Ultimate
24 Hour Traffic Volume	8405	16200
# of Lanes	2	2
Day/Night Split	87/13	87/13
Day Trucks (% of Total Volume)	5.6% Medium 6.8% Heavy	5.6% Medium 6.8% Heavy
Night Trucks (% of Total Volume)	7.4% Medium 9.4% Heavy	7.4% Medium 9.4% Heavy
Right-of-Way Width	45 meters	
Posted Speed Limit	70 km/h	

Note:

1. The current volume is not the Annual Average Daily Traffic, but the averaged raw volumes over three data collection days. For Annual Average Traffic Volume, visit the Peel Open Data website below:
<https://data.peelregion.ca/datasets/RegionofPeel::traffic-count-stations/explore>
2. The ultimate volume is the planned volume during a level of service 'D' where a 2 second vehicle headway and a volume to capacity ratio of 0.9 is assumed. Traffic signals and hourly variations in traffic are also incorporated into the ultimate volume.

If you require further assistance, please contact me at transportationplanningdata@peelregion.ca

Regards,

Luciano Marchesan

Transportation Data & Modelling Analyst,
Transportation Infrastructure Programming
Transportation Division | Public Works | Region of Peel
10 Peel Centre Drive, Suite B, 4th Floor

Christian Macalintal

From: Adrian Soo <asoo@ptsl.com>
Sent: August 24, 2026 9:16 AM
To: Chris Kellar
Cc: Christian Macalintal
Subject: RE: 14475 Highway 50- Internal Road Traffic Ultimate Forecasts (Jade File 26-004-01)

Hi Chris,

As requested, AADT volumes along Street 1, Street 2, and Street 3 have been tabulated below.

The projected 2051 traffic forecasts were extracted/estimated from the Transportation Assessment Update (C.F. Crozier & Associates Inc., February 2026) for the Bolton North Hill Secondary Plan Option 1 and 2 Lands, conducted on behalf of the Bolton North Hill Landowners Group.

2051 Traffic Forecasts			
Road	Street 1	Street 2	Street 3
Description	Collector Roadway (20m ROW) East leg of Highway 50/Emil Kolb Parkway intersection	Collector Roadway (22m ROW) North-South Roadway	Collector Roadway (20m ROW) Highway 50/Street 3 intersection
PM Peak Hour Volumes	EB: 243 VPH WB: 266 VPH Two-Way: 509 VPH	NB: 212 VPH SB: 137 VPH Two-Way: 349 VPH	EB: 164 VPH WB: 67 VPH Two-Way: 231 VPH
AADT ¹	EB: 2,430 VPD WB: 2,660 VPD Two-Way: 5,090 VPD	NB: 2,120 VPD SB: 1,370 VPD Two-Way: 3,490 VPD	EB: 1,640 VPD WB: 670 VPD Two-Way: 2,310 VPD
No. of Lanes	2 lanes (1 travel lane per direction)	2 lanes (1 travel lane per direction)	2 lanes (1 travel lane per direction)
Posted Speed Limit + 10 km/h	60	60	60
Medium Trucks (%) ²	1% ²	1% ²	1% ²
Heavy Trucks (%) ²	1% ²	1% ²	1% ²
Day/Night Split ²	90/10 ²	90/10 ²	90/10 ²
¹ AADT: Annual Average Daily Traffic. Estimated from Figure 23 (2051 Future Total Traffic Volumes). PM peak hour volumes were converted to AADT assuming the PM peak volumes represent 10% of the daily traffic volume. ² Assumed			

Adrian Soo, P.Eng.

APPENDIX B

ENVIRONMENTAL NOISE CRITERIA

ONTARIO MINISTRY OF THE ENVIRONMENT, CONSERVATION AND PARKS (MECP)

Reference: "Environmental Noise Guidelines Stationary and Transportation Sources – Approval and Planning", Publication NPC-300, August, 2013, released October 21, 2013 (updated final version # 22).

SOUND LEVEL CRITERIA FOR ROAD AND RAIL NOISE

TABLE C-1

Sound Level Limit for Outdoor Living Areas

Road and Rail

Time Period	Leq (16) (dBA)
16 hr., 07:00 - 23:00	55

TABLE C-2

Indoor Sound Level Limits

Road and Rail

Type of Space	Time Period	Leq (dBA)	
		Road	Rail
Living/dining, den areas of residences, hospitals, nursing homes, schools, daycare centres, etc.	07:00 – 23:00	45	40
Living/dining, den areas of residences, hospitals, nursing homes, etc. (except schools or daycare centres)	23:00 – 07:00	45	40
Sleeping quarters	07:00 – 23:00	45	40
	23:00 – 07:00	40	35

SOUND LEVEL CRITERIA FOR AIRCRAFT NOISE

TABLE C-3

Outdoor Aircraft Noise Limit

Time Period	NEF/NEP
24-hour	30

TABLE C-4

Indoor Aircraft Noise Limit (Applicable over 24-hour period)

Type of Space	Indoor NEF/NEP*
Living/dining/den areas of residences, hospitals, nursing/retirement homes, schools, daycare centres, etc.	5
Sleeping Quarters	0

* The indoor NEF/NEP values in Table C-4 are used to determine acoustical insulation requirements based on the NEF/NEP contour maps.

SOUND LEVEL CRITERIA FOR STATIONARY SOURCES

TABLE C-5

Exclusion Limit Values of One-Hour Equivalent Sound Level (Leq, dBA) Outdoor Points of Reception

Time of Day	Class 1 Area	Class 2 Area	Class 3 Area	Class 4 Area
07:00 – 19:00	50	50	45	55
19:00 – 23:00	50	45	40	55

TABLE C-6

**Exclusion Limit Values of One-Hour Equivalent Sound Level (Leq, dBA)
Plane of Window of Noise Sensitive Spaces**

Time of Day	Class 1 Area	Class 2 Area	Class 3 Area	Class 4 Area
07:00 – 19:00	50	50	45	60
19:00 – 23:00	50	50	40	60
23:00 – 07:00	45	45	40	55

TABLE C-7

**Exclusion Limit Values for Impulsive Sound Level (L_{LM}, dBAI)
Outdoor Points of Reception**

Time of Day	Actual Number of Impulses in Period of One-Hour	Class 1 Area	Class 2 Area	Class 3 Area	Class 4 Area
07:00 – 23:00	9 or more	50	50	45	55
	7 to 8	55	55	50	60
	5 to 6	60	60	55	65
	4	65	65	60	70
	3	70	70	65	75
	2	75	75	70	80
	1	80	80	75	85

TABLE C-8

**Exclusion Limit Values of Impulsive Sound Level (L_{LM} , dBAI)
Plane of Window - Noise Sensitive Spaces (Day/Night)**

Actual Number of Impulses in Period of One-Hour	Class 1 Area (07:00-23:00)/ (23:00-07:00)	Class 2 Area (07:00-23:00)/ (23:00-07:00)	Class 3 Area (07:00-19:00)/ (19:00-07:00)	Class 4 Area (07:00-23:00)/ (23:00-07:00)
9 or more	50/45	50/45	45/40	60/55
7 to 8	55/50	55/50	50/45	65/60
5 to 6	60/55	60/55	55/50	70/65
4	65/60	65/60	60/55	75/70
3	70/65	70/65	65/60	80/75
2	75/70	75/70	70/65	85/80
1	80/75	80/75	75/70	90/85

SUPPLEMENTARY SOUND LEVEL LIMITS

Indoor limits for transportation sources applicable to noise sensitive land uses are specified in Table C-2 and Table C-4. Table C-9 and Table C-10 are expanded versions of Table C-2 and Table C-4, and present guidelines for acceptable indoor sound levels that are extended to land uses and developments which are not normally considered noise sensitive. The specified values are maximum sound levels and apply to the indicated indoor spaces with the windows and doors closed. The sound level limits in Table C-9 and Table C-10 are presented as information, for good-practice design objectives.

TABLE C-9

**Supplementary Indoor Sound Level Limits
Road and Rail**

Type of Space	Time Period	Leq (Time Period) (dBA)	
		Road	Rail
General offices, reception areas, retail stores, etc.	16 hours between 07:00 – 23:00	50	45
Living/dining areas of residences, hospitals, schools, nursing/retirement homes, daycare centres, theatres, places of worship, libraries, individual or semi-private offices, conference rooms, reading rooms, etc.	16 hours between 07:00 – 23:00	45	40
Sleeping quarters of hotels/motels	8 hours between 23:00 – 07:00	45	40
Sleeping quarters of residences, hospitals, nursing/retirement homes, etc.	8 hours between 23:00 – 07:00	40	35

TABLE C-10

**Supplementary Indoor Aircraft Noise Limit
(Applicable over 24-hour period)**

Type of Space	Indoor NEF/NEP*
General offices, reception areas, retail stores, etc.	15
Individual or semi-private offices, conference rooms, etc.	10
Living/dining areas of residences, sleeping quarters of hotels/motels, theatres, libraries, schools, daycare centres, places of worship, etc.	5
Sleeping quarters of residences, hospitals, nursing/retirement homes, etc.	0

* The indoor NEF/NEP values in Table C-10 are not obtained from NEF/NEP contour maps. The values are representative of the indoor sound levels and are used as assessment criteria for the evaluation of acoustical insulation requirements.

ENVIRONMENTAL NOISE CRITERIA REGION OF PEEL

Reference: "General Guidelines for the Preparation of Acoustical Reports in the Region of Peel", November, 2012 (Updated August 2020)

ROAD TRAFFIC NOISE

TYPE OF SPACE	TIME PERIOD	SOUND LEVEL LIMIT Leq*
Outdoor living area	7:00 a.m. – 11:00 p.m.	Leq (16 hr.) = 55 dBA
Outside bedroom window	11:00 p.m. – 7:00 a.m.	Leq (8 hr.) = 50 dBA
Indoor (bedrooms, hospitals)	11:00 p.m. – 7:00 a.m.	Leq (8 hr.) = 40 dBA
Indoor (living rooms, hotels, private offices, reading rooms)	7:00 a.m. – 11:00 p.m.	Leq (16 hr.) = 45 dBA
Indoor (general offices, shops)	7:00 a.m. – 11:00 p.m.	Leq (16 hr.) = 50 dBA

* Leq, measured in A-weighted decibels (dBA), is the value of the constant sound level which would result in exposure to the same total sound level as would the specified time varying sound, if the constant sound level persisted over an equal time interval.

APPENDIX C

SAMPLE CALCULATION OF PREDICTED UNMITIGATED SOUND LEVELS – TRANSPORTATION SOURCES

Filename: blk246dy.te **Time Period:** Day/Night 16/8 hours
Description: Block 246 Daytime ONLY Wall Calculations

Road data, segment # 1: Highway 50 (day)

```
-----
Car traffic volume : 18451 veh/TimePeriod *
Medium truck volume : 864 veh/TimePeriod *
Heavy truck volume : 314 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)
```

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

```
24 hr Traffic Volume (AADT or SADT): 21810
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 4.40
Heavy Truck % of Total Volume : 1.60
Day (16 hrs) % of Total Volume : 90.00
```

Data for Segment # 1: Highway 50 (day)

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 26.21 m
Receiver height : 7.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00
```

Results segment # 1: Highway 50 (day)

Source height = 1.12 m

ROAD (0.00 + 65.62 + 0.00) = 65.62 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.49	70.39	0.00	-3.61	-1.16	0.00	0.00	0.00	65.62

Segment Leq : 65.62 dBA

Filename: blk246nt.te **Time Period:** Day/Night 16/8 hours
Description: Block 246 Nighttime ONLY Wall Calculations

Road data, segment # 1: Highway 50 (night)

```
-----
Car traffic volume   : 2063   veh/TimePeriod  *
Medium truck volume :    98   veh/TimePeriod  *
Heavy truck volume  :    20   veh/TimePeriod  *
Posted speed limit   :    70   km/h
Road gradient        :     1   %
Road pavement        :     1   (Typical asphalt or concrete)
```

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

```
24 hr Traffic Volume (AADT or SADT): 21810
Percentage of Annual Growth         : 0.00
Number of Years of Growth           : 0.00
Medium Truck % of Total Volume      : 4.50
Heavy Truck % of Total Volume       : 0.90
Day (16 hrs) % of Total Volume      : 90.00
```

Data for Segment # 1: Highway 50 (night)

```
-----
Angle1 Angle2      : -90.00 deg  90.00 deg
Wood depth          :     0      (No woods.)
No of house rows    :     0
Surface             :     1      (Absorptive ground surface)
Receiver source distance : 26.21 m
Receiver height     :     7.50 m
Topography          :     1      (Flat/gentle slope; no barrier)
Reference angle     :     0.00
```

Results segment # 1: Highway 50 (night)

 Source height = 0.98 m

ROAD (0.00 + 58.52 + 0.00) = 58.52 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.50	63.31	0.00	-3.63	-1.17	0.00	0.00	0.00	58.52

Segment Leq : 58.52 dBA

APPENDIX D

SAMPLE CALCULATION OF SOUND LEVELS DUE TO STATIONARY SOURCES – CADNAA

Point Sources

Name		Sel. M.	ID	Result: PWL		Lw / Li		Correction		Sound Reduction		Attenuation		Operating Time		K0	Freq.	Direct.	Height	Coordinates			
				Day	Evening	Night	Type	Value	norm. dB(A)	Day dB(A)	Evening dB(A)	Night dB(A)	R	Area (m²)	(min)	Special (min)	Night (min)	(Hz)	(m)	X (m)	Y (m)	Z (m)	
10 Trucks idling - James Dick			100011	112.6	112.6	112.6	Lw	Agg. Truck+10*LOG10(10)	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.00	0.00	0.0	3.50	r	17599464.59	4861039.97	3.50
			100011	114.4	114.4	114.4	Lw	Agg. Truck+10*LOG10(15)	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.00	0.00	0.0	3.50	r	17599400.12	4861116.63	3.50
			100011	114.9	114.9	114.9	Lw	generator	0.0	0.0	0.0	0.0	0.0	0.0	60.00	0.00	0.00	0.0	2.00	r	17599160.35	4861108.64	2.00
			10003011	79.8	79.8	79.8	Lw	ART406	0.0	0.0	0.0	0.0	0.0	0.0	60.00	0.00	0.00	0.0	2.00	g	17599516.15	4861142.25	7.00
			100011	79.8	79.8	79.8	Lw	ART406	0.0	0.0	0.0	0.0	0.0	0.0	60.00	0.00	0.00	0.0	2.00	g	17599533.91	4860980.64	10.00
EF - Mike Mechanic			10003011	79.8	79.8	79.8	Lw	ART406	0.0	0.0	0.0	0.0	0.0	0.0	60.00	0.00	0.00	0.0	2.00	g	17599529.91	4861122.66	7.00
			100011	101.2	101.2	101.2	Lw	F loader	0.0	0.0	0.0	0.0	0.0	0.0	60.00	0.00	0.00	0.0	3.50	r	17599206.36	4861118.94	3.50
			100011	101.2	101.2	101.2	Lw	F loader	0.0	0.0	0.0	0.0	0.0	0.0	60.00	0.00	0.00	0.0	3.50	r	17599391.77	4861071.68	3.50
			100011	87.6	87.6	87.6	Lw	ZF150	0.0	0.0	0.0	0.0	0.0	0.0	60.00	42.00	24.00	0.0	1.70	g	17599486.24	4861032.30	9.70
			10003011	87.6	87.6	87.6	Lw	ZF150	0.0	0.0	0.0	0.0	0.0	0.0	60.00	42.00	24.00	0.0	1.70	g	17599513.96	4861144.45	6.70
HVAAC unit - Mike Mechanic			100011	94.5	94.5	94.5	Lw	stacker	0.0	0.0	0.0	0.0	0.0	0.0	60.00	0.00	0.00	0.0	5.00	r	17599147.94	4861093.39	5.00
			100011	102.7	102.7	102.7	Lw	screen	0.0	0.0	0.0	0.0	0.0	0.0	60.00	0.00	0.00	0.0	2.50	r	17599165.18	4861088.35	2.50
			100011	102.8	102.8	102.8	Lw	Conv2	0.0	0.0	0.0	0.0	0.0	0.0	60.00	0.00	0.00	0.0	5.00	r	17599175.26	4861089.95	5.00
			10003011	90.8	90.8	90.8	Lw	COMP	0.0	0.0	0.0	0.0	0.0	0.0	10.00	10.00	5.00	0.0	1.50	r	17599474.48	4861141.06	1.50
			100011	102.6	102.6	102.6	Lw	Agg. Truck	0.0	0.0	0.0	0.0	0.0	0.0	60.00	0.00	0.00	0.0	3.50	r	17599398.17	4861066.09	3.50

Line Sources

Name		Sel. M.	ID	Result: PWL			Lw / Li			Correction			Sound Reduction		Operating Time		K0	Freq.	Direct.	Moving Pt. Src		Speed	
				Day	Evening	Night	Type	Value	norm.	Day	Evening	Night	R	Area	Day	Special	Night	(Hz)		Day	Evening	Night	Number
				(dB)	(dB)	(dB)		(dB)	dB(A)	dB(A)	dB(A)	dB(A)		(m²)	(min)	(min)	(min)	(dB)					
20 trucks in and out - James Dick			100011	101.5	-11.5	-11.5	73.9	-39.2	-39.2	PWL-Pl	Agg. Truck	0.0	0.0	0.0	60.00	0.00	0.00	0.0	(none)	20.0	0.0	0.0	15.0
			100011	83.2	-16.8	-16.8	59.2	-40.8	-40.8	PWL-Pl	F loadermov	0.0	0.0	0.0	0.0	0.0	0.0	0.0	(none)	1.0	0.0	0.0	15.0
			100011	88.7	-18.3	-18.3	65.6	-41.4	-41.4	PWL-Pl	Agg. Truck	0.0	0.0	0.0	0.0	0.0	0.0	0.0	(none)	5.0	0.0	0.0	25.0
			100011	80.3	-26.7	-26.7	65.6	-41.4	-41.4	PWL-Pl	Agg. Truck	0.0	0.0	0.0	0.0	0.0	0.0	0.0	(none)	5.0	0.0	0.0	25.0
			100011	80.3	-26.7	-26.7	65.6	-41.4	-41.4	PWL-Pl	Agg. Truck	0.0	0.0	0.0	0.0	0.0	0.0	0.0	(none)	5.0	0.0	0.0	25.0

Vertical Area Sources

Name		Sel. M.	ID	Result: PWL "			Lw / Li		Correction			Sound Reduction		Attenuation			K0	Freq.	Direct.
				Day	Evening	Night	Type	Value	norm.	Day	Evening	Night	R	Area	Day	Special	Night	(dB)	(Hz)
				(dBA)	(dBA)	(dBA)			(dB(A))	(dB(A))	(dB(A))	(dB(A))	(m²)	(m²)	(min)	(min)	(min)		
Auto Bay doors - James Dick			100011	82.0	69.9	69.9	Lw	ARS		0.0	0.0	0.0			30.00	0.00	0.00	0.0	Opening (OAL28)
			100011	82.0	69.9	69.9	Lw	ARS		0.0	0.0	0.0			30.00	0.00	0.00	0.0	Opening (OAL28)
			10003041	82.0	69.9	69.9	Lw	ARS		0.0	0.0	0.0			30.00	0.00	0.00	0.0	Opening (OAL28)
			10003041	82.0	69.9	69.9	Lw	ARS		0.0	0.0	0.0			30.00	0.00	0.00	0.0	Opening (OAL28)
			10003041	82.0	69.9	69.9	Lw	ARS		0.0	0.0	0.0			30.00	0.00	0.00	0.0	Opening (OAL28)
Auto Bay doors - Mike Mechanic			10003041	82.0	69.9	69.9	Lw	ARS		0.0	0.0	0.0			30.00	0.00	0.00	0.0	Opening (OAL28)
			10003041	82.0	69.9	69.9	Lw	ARS		0.0	0.0	0.0			30.00	0.00	0.00	0.0	Opening (OAL28)
			10003041	82.0	69.9	69.9	Lw	ARS		0.0	0.0	0.0			30.00	0.00	0.00	0.0	Opening (OAL28)
			10003041	82.0	69.9	69.9	Lw	ARS		0.0	0.0	0.0			30.00	0.00	0.00	0.0	Opening (OAL28)
			10003041	82.0	69.9	69.9	Lw	ARS		0.0	0.0	0.0			30.00	0.00	0.00	0.0	Opening (OAL28)

APPENDIX E

SAMPLE CALCULATION OF ARCHITECTURAL COMPONENT SELECTION

APPENDIX E-1

SAMPLE CALCULATION OF ARCHITECTURAL COMPONENT SELECTION*

FILE: 26-004-01
 NAME: 14475 Highway 50
 REFERENCE DRAWINGS: Draft Plan
 LOCATION: Block 246 corner bedroom, daytime

		ROAD
Room:	Corner Bedroom	
Exterior Wall area as a percentage of floor area:	West: 55% South: 55%	
Window/Door area as a percentage of floor area:	West: 25% South: 25%	
Number of components:	4	
Outdoor Daytime Leq:	West: 66 (+3 for reflections) = 69 dBA South: 63 (+3 for reflections) = 66 dBA	
Indoor Leq:	45	
Noise Reduction (dBA):	West: 24 South: 22	
Noise Spectrum:	Mixed Road and Distant Aircraft	
Absorption:	Intermediate	

APPROPRIATE ELEMENTS

		STC Rating
Exterior Wall	West	STC 35
	South	STC 32
Window/Door	West	STC 27
	South	STC 24

* Based upon "Controlling Sound Transmission into Buildings", Building Practice Note 56 by National Research Council of Canada, September, 1985.

APPENDIX F

SAMPLE CALCULATION OF SOUND BARRIER ANALYSIS

Filename: blk201ry.te **Time Period:** Day/Night 16/8 hours
Description: Lot 201 Rear Yard Calculations with Barr. Table

Road data, segment # 1: Street 2 (day)

```
-----
Car traffic volume : 3078   veh/TimePeriod  *
Medium truck volume : 31    veh/TimePeriod  *
Heavy truck volume  : 31    veh/TimePeriod  *
Posted speed limit  : 60 km/h
Road gradient       : 2 %
Road pavement       : 1 (Typical asphalt or concrete)
```

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

```
24 hr Traffic Volume (AADT or SADT): 3490
Percentage of Annual Growth         : 0.00
Number of Years of Growth           : 0.00
Medium Truck % of Total Volume      : 1.00
Heavy Truck % of Total Volume       : 1.00
Day (16 hrs) % of Total Volume      : 90.00
```

Data for Segment # 1: Street 2 (day/night)

```
-----
Angle1 Angle2      : -83.00 deg  33.00 deg
Wood depth          : 0          (No woods.)
No of house rows    : 0
Surface             : 1          (Absorptive ground surface)
Receiver source distance : 17.65
Receiver height     : 1.50 m
Topography          : 2          (Flat/gentle slope; with barrier)
Barrier angle1      : -83.00 deg  Angle2 : 33.00 deg
Barrier height       : 0.00 m
Barrier receiver distance : 7.65 m
Source elevation     : 0.00 m
Receiver elevation   : 0.50 m
Barrier elevation    : 0.00 m
Reference angle      : 0.00
```

Results segment # 1: Street 2 (day)

Source height = 1.00 m

Barrier height for grazing incidence

```
-----
Source      ! Receiver      ! Barrier      ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
1.00 !      1.50 !      1.57 !      1.57
```

ROAD (0.00 + 55.66 + 0.00) = 55.66 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-83	33	0.66	59.61	0.00	-1.17	-2.77	0.00	0.00	-0.07	55.59*
-83	33	0.66	59.61	0.00	-1.17	-2.77	0.00	0.00	0.00	55.66

* Bright Zone !

Segment Leq: 55.66 dBA

Barrier table for segment # 1: Street 2 (day)

Barrier Height	Elev of Barr Top	Road dBA	Tot Leq dBA
1.80	1.80	50.58	50.58
1.90	1.90	50.35	50.35
2.00	2.00	50.05	50.05
2.10	2.10	49.69	49.69
2.20	2.20	49.30	49.30
2.30	2.30	48.88	48.88
2.40	2.40	48.44	48.44
2.50	2.50	47.99	47.99
2.60	2.60	47.53	47.53
2.70	2.70	47.08	47.08
2.80	2.80	46.64	46.64
2.90	2.90	46.20	46.20