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PRELIMINARY ENVIRONMENTAL NOISE REPORT

PROPOSED MIXED-USE DEVELOPMENT
MAYFIELD GOLF COURSE AND
SOUTH LANDS RE-DEVELOPMENT
12552 and 12580 TORBRAM ROAD
TOWN OF CALEDON
REGIONAL MUNICIPALITY OF PEEL

JADE ACOUSTICS

PREPARED FOR
Mayfield Golf Course Inc. and South Lands

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SUMMARY

The proposed mixed-use development is located west of Torbram Road and generally between Mayfield Road and Old School Road in the Town of Caledon. There will be a mix of residential, institutional and commercial elements associated with the development. The residential uses are subject to road traffic noise from Torbram Road and the proposed internal roads (Street A, Street B and Street O). The development is not affected by rail or aircraft noise sources.

The environmental noise guidelines of the Town of Caledon, the Region of Peel, and the Ontario Ministry of the Environment, Conservation and Parks (previously, MOE) set out sound level limits for both indoor and outdoor spaces.

Using the road traffic data obtained from the proponent retained traffic consultant (BA Consulting Group Ltd.), the 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 MOE.

It was found that for 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 lots and blocks (units) in close proximity to the road sources require central air conditioning whereas certain 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.

It is predicted that standard exterior wall and window construction will be acoustically satisfactory for all proposed lots and blocks (units). Prior to issuance of building permits, the acoustical requirements should be reviewed to ensure compliance with the applicable guidelines.

A Commercial Block, a Firehall and an Elementary School Block are proposed at the subject site. Detailed information regarding noise sources associated with these blocks are not available at this stage of the project. Once specific information is available, a detailed noise analysis should be prepared by the proponent of these future uses to ensure the applicable guidelines are met at the existing and proposed noise sensitive receptors.

There are zoned industrial lands located on the east side of Torbram Road. It is our understanding that the site plan process remains ongoing for the industrial lands. At that time of this preliminary noise report, with consideration that the subject site is working with a draft plan

of subdivision and the details of the neighbouring industrial developments remain to be determined, the comments on the compatibility of these uses are discussed in a broad nature only. In many cases, it appears the future industrial lands are proposed adjacent to existing residential dwellings that are sporadically located along the east side of Torbram Road.

1.0 INTRODUCTION

Jade Acoustics Inc. was retained by Mayfield Golf Course Inc. and South Lands to investigate the potential impact of noise on the proposed mixed-use development to the satisfaction of the Town of Caledon and the Region of Peel.

The proposed site is identified as:

Part of Lots 19, 20 and 21
Concession 5,
East of Hurontario Street
Town of Caledon
Regional Municipality of Peel

The site is bounded by open space and agricultural lands to the north and west, Torbram Road to the east, and existing residential and agricultural lands to the south.

Surrounding land uses include existing and future residential developments, and existing agricultural uses. To the east through southeast of the site and on the east side of Torbram Road, there is a development application (for industrial uses) under review with the Town of Caledon.

A Key Plan is attached as Figure 1.

This report is based on the following information:

- Draft Plan of Subdivision prepared by Malone Given Parsons Inc. dated October 1, 2024 received by Jade Acoustics Inc. on October 3, 2024;
- Preliminary Grading Plan prepared by SCS Consulting Group Ltd. dated July 2023, received August 1, 2023;
- Transportation Impact Study prepared by BA Consulting Group Ltd. dated September 2024, received by Jade Acoustics Inc. on September 27, 2024;
- Road traffic information provided by BA Consulting Group Ltd., received August 23, 2022 and September 27, 2024; and
- Site visit conducted by Jade Acoustics Inc. staff on August 6, 2024.

The proposed development is comprised of single detached residential dwellings, street townhouse, lane townhouse and medium density residential dwellings (potential for stacked

townhouses), future residential, a commercial block, a school block, firehall block, parks, natural heritage system blocks, stormwater management ponds, and new internal roads.

Single detached dwellings with a maximum height of two (2) storeys, street and lane access townhouse dwellings with a maximum height of three (3) storeys, and medium density dwellings with a maximum height of four (4) storeys have been considered in this report.

The draft plan of subdivision does not include building footprint information at this time. It is expected that the details of building footprint locations will be provided at a future submission stage and the noise report will be updated accordingly.

There are several residential medium density blocks proposed adjacent to Torbram Road. There are no specific details available for these blocks at this time. A separate noise report will be required for the medium density blocks when the information becomes available. In general, and as a minimum, the medium density blocks (dwellings) will require central air conditioning (as a minimum applicable to the first row of residential dwellings adjacent to Torbram Road) and the 2nd row possibly the provision for adding central air conditioning. The exact acoustical requirements will be determined when the building plans, building footprint locations and site layout information are available. If these details are all known at the time of the next noise report for the subject site, then there could be one (1) single noise report to cover all the lots, blocks (units) and medium density blocks. To clarify as well, the commercial block along Torbram Road will also require an environmental noise report to be prepared.

Figure 2 shows the proposed development and the minimum noise abatement measures required to meet the noise guidelines.

2.0 NOISE SOURCES

2.1 Transportation Sources

The noise source of potential impact on the proposed development is the road traffic on Torbram Road and the proposed internal roads (Street A, Street B and Street O).

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 when completing the noise analysis.

The ultimate road traffic information for Torbram Road and proposed internal roads was obtained from the Transportation Impact Study prepared by BA Consulting Group Ltd. noted in Section 1.0 and has been used for the noise analysis. The Future Total 2034 Traffic volumes provided were forecasted to 2044 with an estimated growth rate of 3%, with the greater of the AM or PM peak volumes (from 2034 data) considered to represent 10% of the overall daily volume. The growth rate of 3% was discussed with BA Group and determined to be a reasonable estimate for the subject site area between the years of 2034 to 2044. Additionally, the truck percentage has been estimated based on the existing traffic count information provided by BA Consulting Group Ltd. and a day/night traffic split of 90/10 has been assumed. The posted speed limit for Torbram Road was confirmed based on the site visit and the posted speed limit for the proposed internal roads has been assumed. For Tobram Road, the ultimate traffic volume was assessed at each future intersection with the subject site and then only the highest future volume along Torbram Road was applied to all lots/blocks when completing the transportation analysis.

In regard to one of the proposed internal roads (Street A) that enters the site off of Torbram Road, there will be a reduction in traffic volume on this roadway further into the site as it heads to the northwest dwellings of the development west of Street B. The reduction in volume is based on the traffic entering the site and immediately heading north and south to the dwellings closer to Torbram Road as well as the commercial uses. As discussed with BA Group, the traffic volume on the west portion of the site may be around thirty (30) to forty (40) percent of that initial traffic volume that enters the site. Therefore, the portion of Street A that is west of Street B will have low traffic volumes and be acoustically insignificant; therefore, that portion of Street A was not considered further.

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 requirement.

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

To note here for completeness, for Mayfield Road and Old School Road, based on the expected traffic volumes and the significant distance separation to the subject site proposed dwellings, these roadways will be acoustically insignificant and were not analyzed further.

The site is not affected by rail or aircraft traffic.

2.2 Stationary Sources

A Firehall (Block 293) and an elementary school block (Block 281) are proposed within the subject site. Detailed information regarding noise sources associated with the school block and firehall is not available at this stage of the project. Once specific information is available, a detailed noise analysis should be prepared by the proponent of the school and firehall to ensure the applicable guidelines are met at the existing and proposed noise sensitive receptors.

There is a commercial block (Block 292) proposed within the subject site. Detailed information regarding noise sources associated with the future commercial block is not available at this stage of the project. Once specific information is available, a detailed noise analysis should be prepared by the proponent of the commercial block to ensure the applicable guidelines are met at the existing and proposed noise sensitive receptors.

Detailed information regarding the proposed medium density blocks adjacent to Torbram Road is not available at the time of completion of this report. It is assumed that the blocks will consist of up to four-storey townhouses. Any single-family residential air conditioner units (i.e. one air conditioner unit per each dwelling unit) are considered exempt from the noise guidelines in this context. There are potential noise sources associated with townhouses depending on the final architectural design and selection of mechanical equipment. A review of detailed drawings will be required, when ready, to determine if an investigation of mechanical noise sources is necessary.

There is an application(s) submitted to the Town of Caledon for a future industrial development east of Torbram Road and east through southeast of the subject site. Based on information available from the Town of Caledon website, the lands for future industrial development are subject to an approved Minister's Zoning Order (and the zoning for industrial use is therefore in place). It is our understanding that the industrial lands remain under review by the Town of Caledon as part of the site plan application process. The proponent of the future industrial development should prepare acoustic assessment reports (i.e. environmental noise reports) to support the application with consideration of the existing noise sensitive receptors in

the general site area and also consider the requirement for the future purchasers/tenants of the industrial buildings to have an Environmental Compliance Approval (ECA) completed related to current and future operations.

As of the completion of this report, detailed information regarding the future industrial development is not available as we understand the site plan application process remains ongoing and therefore the future uses at the industrial site have not been finalized (for example, related to building layout locations, noise sources and the mitigation required to address existing noise sensitive receptors). Further investigation regarding the industrial development status will need to be conducted when preparing the detailed noise report for the subject site to determine if finalized plans/information for the industrial development is available. See Section 4.2 for further comments on the compatibility of the future industrial uses and the subject site.

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 (previously, MOE) 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 Transportation Sources

3.1.1 Indoors

If the nighttime (11:00 p.m. to 7:00 a.m.) sound levels in terms of Leq at the exterior face of a bedroom or living/dining room window are equal to or greater than 60 dBA, or if the daytime (7:00 a.m. to 11:00 p.m.) sound levels at the exterior face of a bedroom or living/dining room window exceed 65 dBA, means must be provided so that windows can be kept closed for noise control purposes and central air conditioning is required. A warning clause advising the occupant of the potential interference with some activities is also required and must be included in all offers of purchase and sale, lease agreements and included in the development agreements.

For nighttime sound levels 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 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 and must be included in all offers of purchase and sale, lease agreements and included in the development agreements.

In all cases, the air cooled condenser units must not exceed an AHRI 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 MOE, the Region of Peel and the Town of Caledon, indoor noise criteria for road traffic noise is 40 dBA (Leq8hour) for the bedrooms during nighttime hours, 45 dBA (Leq8hour) for the living/dining rooms during nighttime hours and 45 dBA (Leq16hour)

for living/dining rooms and bedrooms during daytime hours. These criteria are used to determine the architectural requirements.

3.1.2 Outdoors

Based on the MOE guidelines, for outdoor amenity areas (Outdoor Living Area – OLA) a design goal of 55 dBA daytime (7:00 a.m. to 11:00 p.m.) sound level is used with an excess not greater than 5 dBA considered acceptable in some cases. Where the unmitigated sound level during the day exceeds 55 dBA (LeqDay) but is less than 60 dBA (LeqDay), a warning clause is required and mitigation should be considered. When the unmitigated sound level exceeds 60 dBA, sound barriers and warning clauses are generally required to achieve as close to 55 dBA as is technically, economically and administratively feasible.

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 noise to the MOE 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 twenty (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 MOE 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.

4.0 NOISE IMPACT ASSESSMENT

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 MOE.

Table 2 provides a summary of predicted sound levels outdoors 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, at 7.5 m above grade for three-storey dwellings, and at 10.5 m above grade for four-storey dwellings. The analysis accounts for screening from the proposed dwellings themselves within the subject site as well as existing building structures (as applicable).

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

- Rear yard setback of 7.5 m;
- Exterior side yard setback of 4.5 m;
- Interior side yard setback of 0.6 m; and
- Front yard setback of 6.5 m.

The Draft Plan of Subdivision prepared by Malone Given Parsons Inc. dated October 1, 2024, received by Jade Acoustics Inc. on October 3, 2024, and Preliminary Grading Plan prepared by SCS Consulting Group Ltd. dated July 2023, received August 1, 2023, were used in the analysis.

The highest sound levels were predicted for medium density Blocks 276, 277, 279 and 280 (assumed dwellings directly adjacent to Torbram Road). With the absence of building footprint information, it has been assumed for the medium density blocks that any townhouse dwellings in the first row by Torbram Road will be fronting Torbram Road such that the amenity spaces are at the rear of the building and screened from Torbram Road. The unmitigated sound level at the front wall of the worst case assumed dwellings is predicted to be up to 67 dBA (daytime) and up to 60 dBA (nighttime).

For Block 252 (all units) fronting Street O with exposure to Torbram Road, the unmitigated daytime sound level at the front wall is predicted to be up to 58 dBA (daytime) and up to 51 dBA (nighttime). The unmitigated sound level in the rear yard is predicted to be up to 43 dBA (daytime).

For Block 257 (all units) fronting Street A with exposure to Torbram Road and Street B, the unmitigated daytime sound level at the front wall is predicted to be up to 59 dBA (daytime) and up to 53 dBA (nighttime).

For Block 303 with exposure to Torbram Road, the unmitigated daytime sound level at the rear wall is predicted to be 51 dBA (daytime) and 44 dBA (nighttime). The unmitigated sound level in the rear yard is predicted to be 50 dBA (daytime).

For Lot 121 with exposure to Streets A and B, the unmitigated daytime sound level at the front wall is predicted to be 59 dBA (daytime) and 53 dBA (nighttime). The unmitigated sound level in the rear yard is predicted to be 54 dBA (daytime).

For Lot 164 with exposure to Street B, the unmitigated daytime sound level at the side wall is predicted to be 59 dBA (daytime) and 53 dBA (nighttime). The unmitigated sound level in the rear yard is predicted to be 55 dBA (daytime).

Where the sound level limits are 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, there is an elementary school, a firehall and a commercial block proposed within the subject site. Once details of the uses are known, a noise report should be prepared by the proponent of each use to ensure the applicable sound level limits are met at the existing as well as proposed noise sensitive receptors within the subject site.

Future uses not associated with the subject site

As noted in Section 2.2, there is an industrial development proposed east of Torbram Road and east through southeast of the subject site. Further investigation into the development status will need to be conducted when preparing the detailed noise report to determine if

detailed information on the industrial development has become available and a detailed noise investigation can be completed.

The potential noise sources affiliated with the proposed industrial site include, but are not limited to, at-grade and rooftop mechanical equipment (such as HVAC equipment), truck delivery related activities and loading bay operations. As we understand the site plan application process remains ongoing, the final site layout and building designs is not known at this time. A review of the respective industrial site will be required and investigated as part of a future detailed environmental noise report.

Acoustical mitigation measures are available if sound level compliance is not predicted to be achieved at the subject site noise sensitive receptors. The potential mitigation measures include acoustic barriers, investigation of Class 4 sound level limits, site layout considerations at the subject site and/or special dwelling designs (or a combination of all these measures). If a Class 4 designation and corresponding sound level limits are investigated as an option it should be noted that classification of a Class 4 Area is subject to formal confirmation from the land use planning authority (and in this case that is likely to be the Town of Caledon). In many cases, it appears existing residential dwellings on the east side of Torbram Road are present and would be the closest noise sensitive receptors to the proposed industrial lands (future buildings). However, there are some cases where the proposed noise sensitive receptors associated with the subject site would be the closest noise sensitive receptors to the industrial lands/uses. To re-iterate from above, as the subject site is only at a draft plan of subdivision stage and the review of the industrial lands application is ongoing, the detailed review of the industrial lands/uses is to be completed when more detailed information is available. A separate Detailed Environmental Noise Report will be required for the subject site at the time of a future submission.

5.0 NOISE ABATEMENT REQUIREMENTS

The noise mitigation requirements for both the indoor and outdoor locations are detailed below. Table 3 and Figure 2 provide a summary of the acoustical mitigative requirements for the residential lots and blocks (units) in this development.

5.1 Indoors

Architectural Component Requirements

The indoor noise exposure criteria for road traffic can be achieved in all cases by using appropriate architectural elements for external wall, window and exterior door construction. The indoor criteria for road traffic noise of 40 dBA (Leq8hour) for the bedrooms during nighttime hours, 45 dBA (Leq8hour) for the living/dining rooms during nighttime hours and 45 dBA (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 MOE indoor criteria for road traffic for daytime and nighttime hours; therefore, a bedroom with calculated daytime sound level was used for the analysis. The worst case location would be a stacked townhouse directly adjacent to Torbram Road. The exterior walls and windows would 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 D.

For the worst case location, exterior walls having an STC 36 rating and windows having an STC 28 rating would be needed.

These STC ratings comply with the minimum structural and safety requirements provided by standard construction practices; therefore, standard window and exterior wall construction is acoustically acceptable for all proposed residential units.

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.

An STC 54 rating for the roof, normally met by most residential roof construction with ventilated attic space, would be acoustically acceptable.

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 MOE 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.

5.2 Outdoors

The outdoor amenity area is required to be exposed to sound levels of no more than 55 dBA during the day. A 5 dB increase is considered acceptable in certain situations. Typically, if the sound level (LeqDay) is above 60 dBA, some form of mitigation and a warning clause is required.

Based on Section 4.1 as related to the dwellings not associated with the medium density block, the highest unmitigated predicted sound level for any traditional rear yard at the subject site is equal to or less than 55 dBA. Therefore, all traditional rear yards are predicted to be in compliance with the sound level limits without the need for acoustic barriers. In summary, no acoustic barriers have been proposed.

As noted in Section 3.1.2, balconies and/or elevated terraces which do not meet specified criteria are excluded as noise sensitive areas that require mitigation. It is expected that the balconies and/or elevated terraces associated with the residential units within the residential medium density blocks with exposure to Torbram Road and internal roads will be less than 4.0 m deep. Therefore, sound barriers for the balconies and/or elevated terraces associated

with the medium density block immediately adjacent to Torbram Road would not be required. It has been assumed that the dwellings will be fronting Torbram Road and therefore with any potential rear yards sufficiently screened by the buildings themselves. A more comprehensive review will be conducted when the building(s) footprint/layout is determined, and final drawings are prepared for the medium density residential blocks. An updated noise report is to be prepared when this information is available.

5.3 Stationary Sources

A noise study should be prepared by the developers of the future school block, the firehall and the commercial block to ensure the applicable sound level limits are met at the existing as well as proposed noise sensitive receptors within the subject site.

In anticipation of the commercial uses within the subject site, it is recommended that dwelling units adjacent to the block be provided with a proximity warning clause notifying the purchasers/tenants that should commercial uses be introduced, the activities and/or equipment associated with the uses may at times be audible. Table 3 and Figure 2 outline the lots and blocks (units) for which the proximity warning clause is recommended. The need for the proximity warning clause will be re-evaluated at the time of the detailed noise report (i.e. as it relates to the final residential and commercial layout).

As noted in Section 2.2 and 4.2, there is an industrial development proposed east of Torbram Road and east through southeast of the subject site. Further investigation into the development status will need to be conducted when preparing the detailed noise report to determine if detailed information on the industrial development has become available (and an investigation completed as required as part of a Detailed Environmental Noise Report for the subject site).

6.0 CONCLUSIONS

With the incorporation of the items discussed (see Table 3, Notes to Table 3 and Figure 2), the sound levels are predicted to be within the appropriate environmental noise criteria. In accordance with the Town's, Region's and MOE's implementation guidelines, where mitigation is required, future occupants will be advised through the use of warning clauses.

Once the final site plan, grading plan and building plans are available, a detailed noise report should be prepared to ensure compliance with the applicable guidelines.

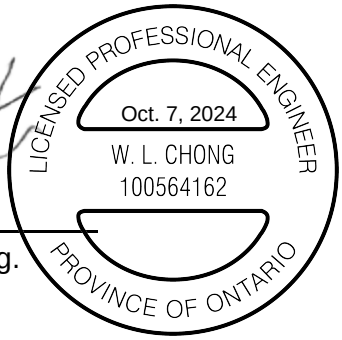
As discussed in Section 4.2, a future detailed noise report will also need to investigate the industrial lands on the east side of Torbram Road (if site plan has been approved at that time) in terms of sound level compliance at the subject site noise sensitive receptors and determination of any potential acoustical mitigation measures.

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

Prior to issuance of occupancy permits, an acoustical consultant should confirm that the acoustical requirements are in compliance with the environmental noise report.

Respectfully submitted,

JADE ACOUSTICS INC.



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JC/AK/jg
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7.0 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 (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.

TABLE 1

PROPOSED MIXED-USE DEVELOPMENT

MAYFIELD GOLF COURE AND SOUTH LANDS RE-DEVELOPMENT

12552 AND 12580 TORBRAM ROAD

TOWN OF CALEDON

REGIONAL MUNICIPALITY OF PEEL

SUMMARY OF ROAD TRAFFIC DATA

ROAD	TORBRAM ROAD	STREET A	STREET B	STREET O
AADT* (2044)	18,344	4,637	5,241	2,822
No. of Lanes	2	2	2	2
Posted Speed (km/h)**	70**	50**	50**	50**
Trucks (%)	2.4	2***	2***	2***
Medium/Heavy Split (%)	75/25	50/50***	50/50***	50/50***
Gradient (%)	1	1	1	1
Day/Night Split (%)	90/10***	90/10***	90/10***	90/10***

* AADT: Annual Average Daily Traffic. See Section 2.1 for details.

** Additional 10 km/h was used in the calculations, as required by the Town of Caledon. To clarify for completeness, the speeds shown above are without the 10 km/h adjustment.

*** Assumed.

TABLE 2

PROPOSED MIXED-USE DEVELOPMENT

MAYFIELD GOLF COURE AND SOUTH LANDS RE-DEVELOPMENT

12552 AND 12580 TORBRAM ROAD

TOWN OF CALEDON

REGIONAL MUNICIPALITY OF PEEL

PREDICTED UNMITIGATED SOUND LEVELS
OUTDOORS DUE TO ROAD TRAFFIC

Lots/Blocks (Units)*	Location**	Source	Distance (m)	Leq (dBA)			
				Day (7:00 a.m. to 11:00 p.m.)		Night (11:00 p.m. to 7:00 a.m.)	
				Separate	Combined	Separate	Combined
Block 252	Front Wall	Torbram Road	104.5	50	58	44	51
		Street O	15.0	57		51	
	Rear Yard	Torbram Road	109.0	43	--	--	--
Block 257	Front Wall	Torbram Road	103.5	49	59	43	53
		Street A	17.5	58		52	
		Street B	96.0	45		38	
Block 276	Front Wall	Torbram Road	25.5	65	66	59	59
		Street A	17.5	54		48	
Block 279	Front Wall	Torbram Road	20.0	67	67	60	60
		Street B	22.5	52		45	
Block 303	Rear Wall	Torbram Road	179.5	51	--	44	--
	Rear Yard	Torbram Road	178.5	50	--	--	--

* 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, 7.5 m above grade for third floor, or 10.5 m above grade for fourth floor (as applicable).

TABLE 2 - Continued

PROPOSED MIXED-USE DEVELOPMENT

MAYFIELD GOLF COURE AND SOUTH LANDS RE-DEVELOPMENT

12552 AND 12580 TORBRAM ROAD

TOWN OF CALEDON

REGIONAL MUNICIPALITY OF PEEL

PREDICTED UNMITIGATED SOUND LEVELS
OUTDOORS DUE TO ROAD TRAFFIC

Lots/Blocks (Units)*	Location**	Source	Distance (m)	Leq (dBA)			
				Day (7:00 a.m. to 11:00 p.m.)		Night (11:00 p.m. to 7:00 a.m.)	
				Separate	Combined	Separate	Combined
Lot 121	Front Wall	Street A	21.0	53	59	47	53
		Street B	17.0	58		51	
	Rear Yard	Street A	23.0	54	--	--	--
Lot 164	Side Wall	Street B	16.0	59	--	53	--
	Rear Yard	Street B	21.0	55	--	--	--

* 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, 7.5 m above grade for third floor, or 10.5 m above grade for fourth floor (as applicable).

TABLE 3

PROPOSED MIXED-USE DEVELOPMENT

MAYFIELD GOLF COURE AND SOUTH LANDS RE-DEVELOPMENT

12552 AND 12580 TORBRAM ROAD

TOWN OF CALEDON

REGIONAL MUNICIPALITY OF PEEL

SUMMARY OF MINIMUM NOISE ABATEMENT MEASURES

Lots/Blocks (Units)	Air Conditioning[(1)*]	Exterior Wall[(2)*]	Window[(3)*]	Acoustic Fence[(4)*]	Warning Clause[(5)]
Medium density blocks 276, 277, 279 and 280	Mandatory	Standard	Standard	No	A, B, D
Blocks 250 to 252 and medium density blocks 278	Provision for Adding	Standard	Standard	No	A, C, D
Block 249 (east unit), Blocks 257 (all units), 258 (all units), Blocks 305 to 307 and Lots 120 to 131, 142, 143, 164, 165, 186, 187, 206, 219 and 232 to 241	Provision for Adding	Standard	Standard	No	A, C
Blocks 242 (all units), 243 (all units) and 245 (all units)	No Special Requirements				D
All other lots/blocks (units)	No Special Requirements				

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

Note: See Figure 2 for lot/block locations. For the medium density blocks, the requirements noted above are preliminary in nature and will need to be refined when more details are available at the time of a future submission when another noise report will be required.

NOTES TO TABLE 3

1. Means must be provided to allow windows to remain closed for noise control purposes. For air cooled condensers units, the AHRI Sound Rating must not exceed 7.6 bels. The air cooled condenser units should be placed in a noise insensitive location which complies with municipal by-laws.

   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 AHRI sound rating must not exceed 7.6 bels and should be placed in a noise insensitive location which complies with municipal by-laws.

2. Exterior Wall: Based on standard assumptions. See Section 5.1 for details.

3. Window: Based on standard assumptions. See Section 5.1 for details.

4. Acoustic barriers must be of a solid construction with no gaps and have a minimum surface density of 20 kg/m^2. See Section 5.2 for details.

5. Warning Clauses to be placed in the subdivision agreement and to be included in offers of purchase and sale or lease on designated lots and blocks:

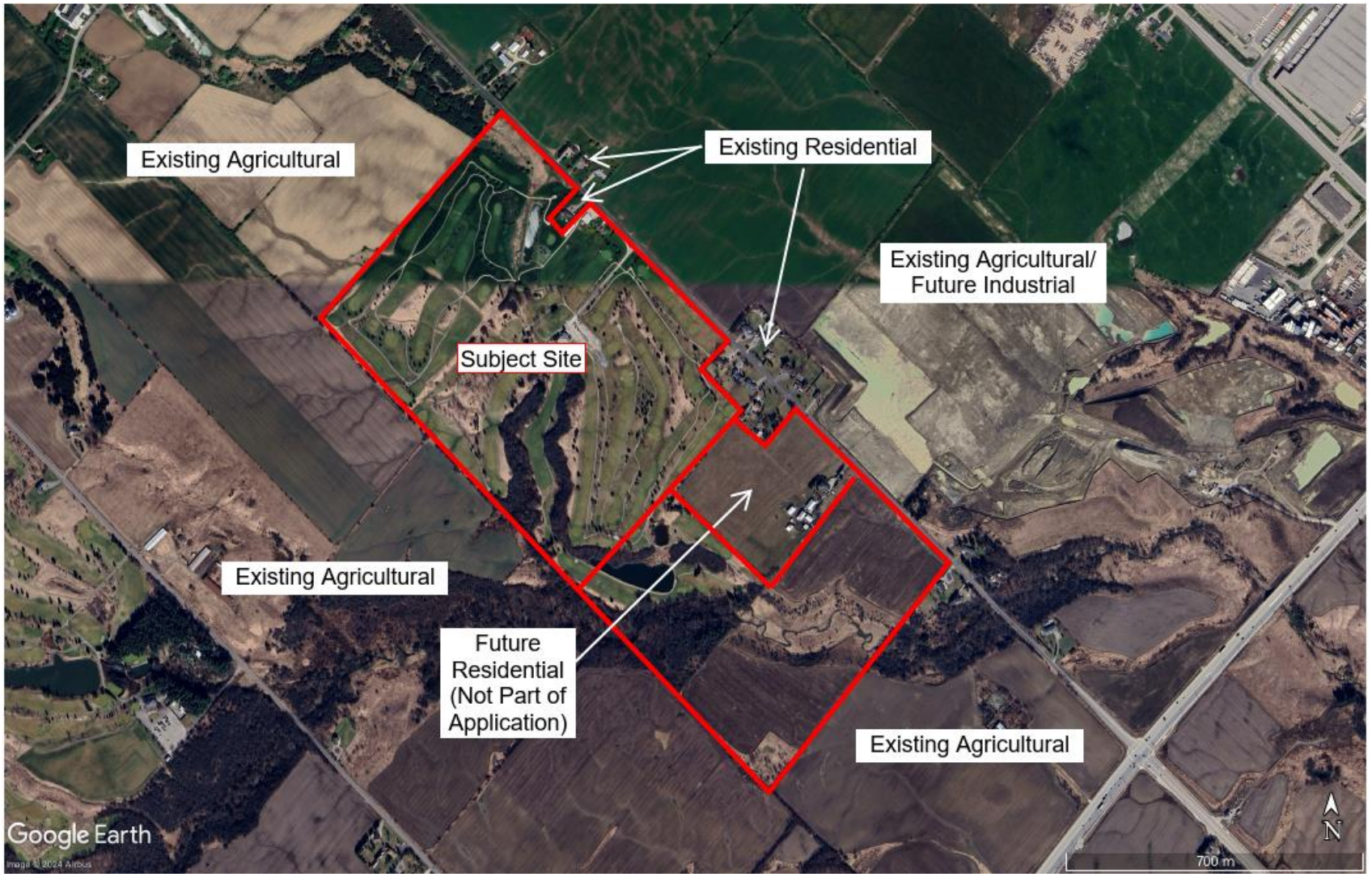
   A. "Purchasers/tenants are advised that despite the inclusion of noise control features in this development area and within the dwelling units, noise due to increasing road traffic may continue to be of concern, occasionally interfering with the activities of the occupants as the sound level may exceed 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 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 closed if road traffic noise interferes with their indoor activities. 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 the outdoor activities of the occupants and their neighbours.”

   C. “Purchasers/tenants are advised that the dwelling unit was fitted with a forced air heating system and the ducting, etc. sized to accommodate a central air conditioning unit. Air conditioning may be installed at the owner’s option and cost. (Note: locate air cooled condenser unit in a noise insensitive area which complies with municipal by-laws and ensure the unit has an AHRI sound rating not exceeding 7.6 bels).”

D. “Purchasers/tenants are advised that due to the proximity of the nearby commercial uses, firehall, and/or future industrial uses, noise from these uses may at times be audible.”

6. A conventionally ventilated attic roof construction is satisfactory in all cases.



N.T.S.

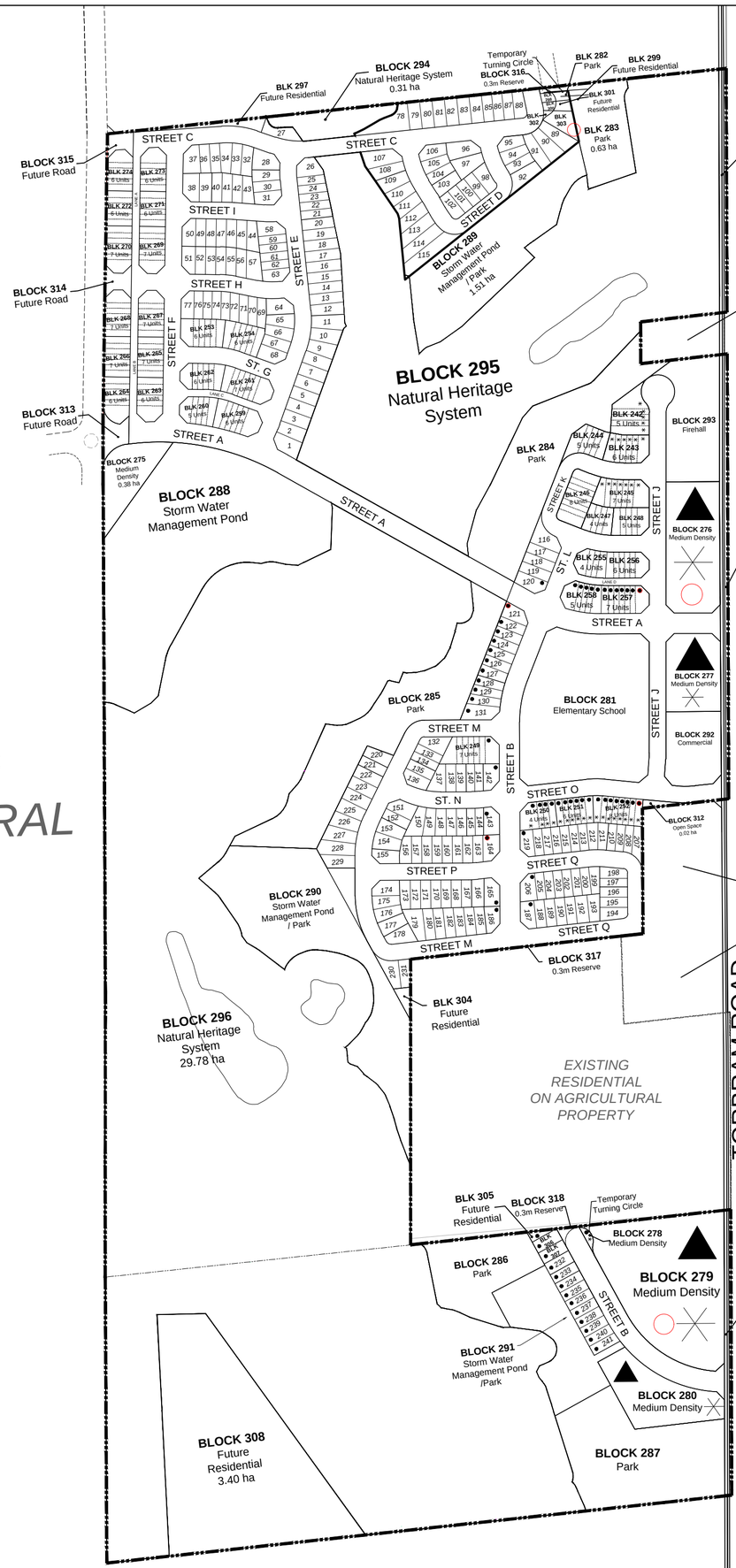
Proposed Mixed-Use Development
Mayfield Golf Course Re-Development
12552 and 12580 Torbram Road
Town of Caledon

Date: October 2024 **File: 22-099**

KEY PLAN

FIGURE 1

JADE ACOUSTICS



LEGEND:

- ▲ Mandatory Central Air Conditioning and Warning Clause (See text, Table 3 and Notes to Table 3 for details)
- ● Provision for Adding Central Air Conditioning and Warning Clause (See text, Table 3 and notes to Table 3 for details)
- ○ Lot/Block/Unit Analyzed
- ✳ Proximity Warning Clause (See text, Table 3 and notes to Table 3 for details)

N.T.S.

Proposed Mixed-Use Development
Mayfield Golf Course Re-Development
12552 and 12580 Torbram Road
Town of Caledon

Date: October 2024 Our File: 22-099

JADE ACOUSTICS

PLAN OF DEVELOPMENT SHOWING MINIMUM NOISE MITIGATION MEASURES

FIGURE 2

APPENDIX A

CORRESPONDENCE REGARDING ROAD TRAFFIC DATA

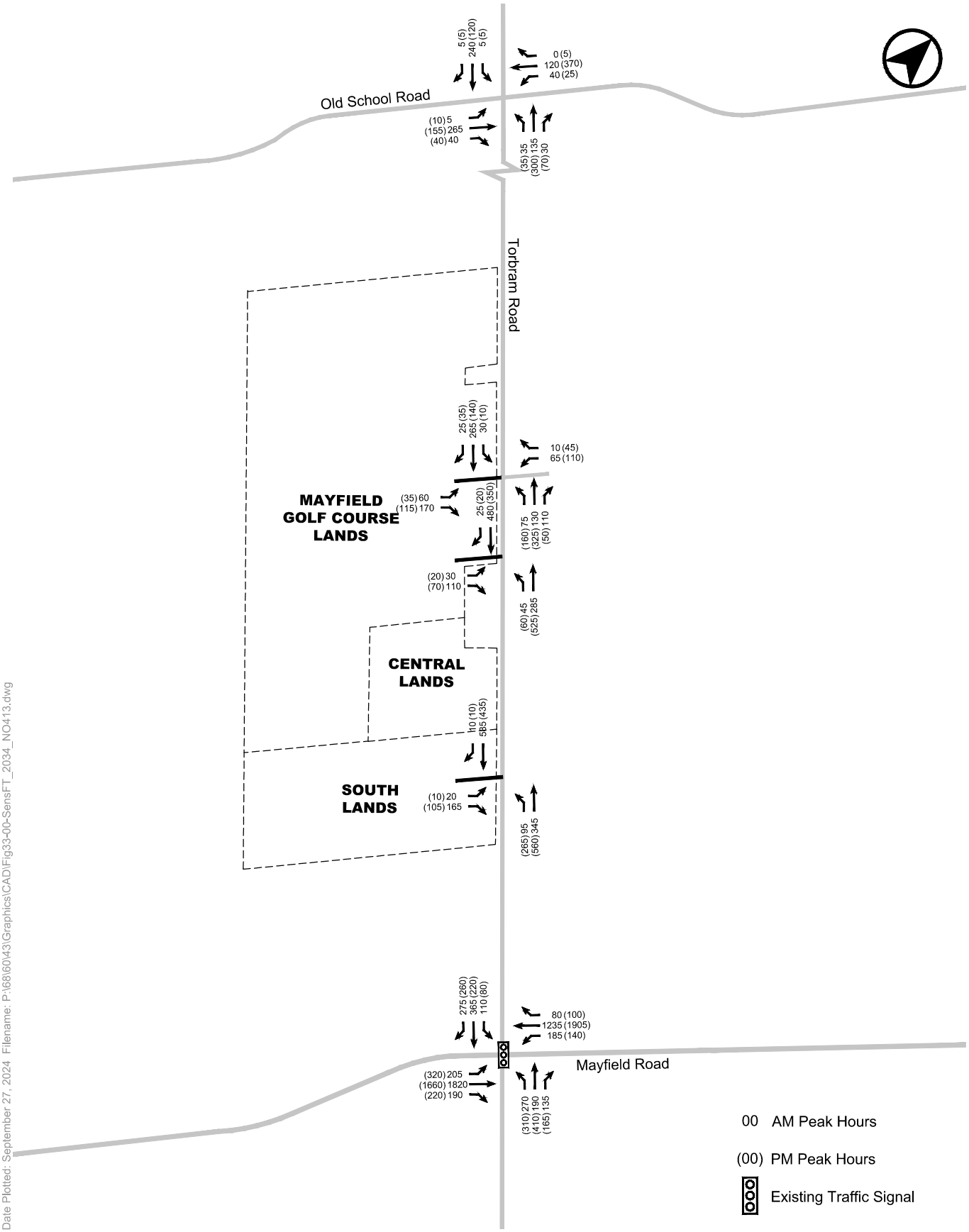
MAYFIELD GOLF COURSE AND SOUTH LANDS

Town of Caledon
Transportation Impact Study

Prepared For: Mayfield Golf Course Inc. and Tullamore Industrial GP Limited PIN 143470069

September 2024

BA Group



Date Plotted: September 27, 2024 Filename: P:\68\60\43\Graphics\CAD\Fig33-00-SensFT_2034_NO413.dwg

FIGURE 33 SENSITIVITY ANALYSIS - FUTURE TOTAL PLUS CENTRAL PARCEL TRAFFIC VOLUMES (2034) - WITHOUT HIGHWAY 413

BA GROUP 6860-43 MAYFIELD GOLF COURSE - 12580 & 12552 TORBRAM ROAD, CALEDON

Jake Chong

From: Luke J. Richardson <richardson@bagroup.com>
Sent: September 27, 2024 10:18 AM
To: Jake Chong
Cc: Aaron Keey; Giuseppe Russo; Clara Filipetti; Divankshi Gandhi; Vimal Patel
Subject: RE: Mayfield Draft TIS (JAI File: 22-099)
Attachments: 6860-43 Growth 2034 to 2051.pdf

Hi Jake,

Further to the below, we have undertaken a growth analysis based on our 2034 volumes in the Mayfield Golf Course report and 2051 volumes published in the report for the Mayfield-Tullamore Secondary Plan. Please see attached for results of the analysis. The growth varies depending on the road/road section/time period, however if you need a single growth rate to apply universally, a rate of 3% feels about right based on these numbers.

We can also provide the 2051 volumes if that's helpful at all. The 2051 volumes are based on the Region's EMME model.

Hope this helps. Feel free to get in touch if you'd like to discuss further.

Thanks,
Luke

Luke J. Richardson, P.Eng.
Associate

BA Consulting Group Ltd.

60 - 40 Weber Street East | Kitchener
416 961 7110 x162 | richardson@bagroup.com

From: Luke J. Richardson
Sent: September 26, 2024 5:26 PM
To: Jake Chong <jake@jadeacoustics.com>
Cc: Aaron Keey <aaron@jadeacoustics.com>; Giuseppe Russo <giusepper@geranium.com>; Clara Filipetti <Clara.Filipetti@bagroup.com>; Divankshi Gandhi <divankshig@geranium.com>; Vimal Patel <vimalp@geranium.com>
Subject: RE: Mayfield Draft TIS (JAI File: 22-099)

Hi Jake,

Please see attached for the volumes requested.

For the growth rate, the release of the Town's Multimodal TMP changes things up on this a bit. Our model assumes no widenings have occurred by our 2034 horizon, however by 2044, Torbram Road is likely to be widened and Old School Road may also be widened which will attract additional traffic. The Region's EMME model would assist with determining

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Turning Movement Count (6 . TORBRAM RD & GOLF CLUB MAINTENANCE ACCESS)

Start Time	N Approach TORBRAM RD					S Approach TORBRAM RD					W Approach GOLF CLUB MAINTENANCE ACCESS					Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	UTurn N:N	Peds N:	Approach Total	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	0	21	0	0	21	11	0	0	0	11	1	0	0	0	1	33	
07:15:00	0	29	0	0	29	26	0	0	0	26	0	0	0	0	0	55	
07:30:00	0	44	0	0	44	15	0	0	0	15	0	0	0	0	0	59	
07:45:00	0	36	0	0	36	16	0	0	0	16	0	0	0	0	0	52	199
08:00:00	0	46	0	0	46	15	0	0	0	15	0	0	0	0	0	61	227
08:15:00	0	45	0	0	45	16	0	0	0	16	0	0	0	0	0	61	233
08:30:00	0	29	0	0	29	18	0	0	0	18	0	0	0	0	0	47	221
08:45:00	0	20	0	0	20	27	0	0	0	27	0	0	0	0	0	47	216
BREAK																	
16:00:00	0	20	0	0	20	64	0	0	0	64	1	0	0	0	1	85	
16:15:00	0	22	0	0	22	61	0	0	0	61	0	0	0	0	0	83	
16:30:00	0	26	0	0	26	60	1	0	0	61	1	0	0	0	1	88	
16:45:00	0	22	0	0	22	56	0	0	0	56	0	0	0	0	0	78	334
17:00:00	0	18	0	0	18	51	0	0	0	51	0	0	0	0	0	69	318
17:15:00	0	28	0	0	28	61	0	0	0	61	0	0	0	0	0	89	324
17:30:00	0	24	0	0	24	53	0	0	0	53	0	0	0	0	0	77	313
17:45:00	0	22	0	0	22	47	0	0	0	47	0	0	0	0	0	69	304
Grand Total	0	452	0	0	452	597	1	0	0	598	3	0	0	0	3	**1053**	-
Approach%	0%	100%	0%		-	99.8%	0.2%	0%		-	100%	0%	0%		-	**-**	-
Totals %	0%	42.9%	0%		42.9%	56.7%	0.1%	0%		56.8%	0.3%	0%	0%		0.3%	**-**	-
Heavy	0	12	0		-	11	0	0		-	0	0	0		-	**-**	-
Heavy %	0%	2.7%	0%		-	1.8%	0%	0%		-	0%	0%	0%		-	**-**	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 07:30 AM - 08:30 AM Weather: Clear Sky (11.13 °C)

Start Time	N Approach TORBRAM RD					S Approach TORBRAM RD					W Approach GOLF CLUB MAINTENANCE ACCESS					Int. Total (15 min)
	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	
07:30:00	0	44	0	0	44	15	0	0	0	15	0	0	0	0	0	59
07:45:00	0	36	0	0	36	16	0	0	0	16	0	0	0	0	0	52
08:00:00	0	46	0	0	46	15	0	0	0	15	0	0	0	0	0	61
08:15:00	0	45	0	0	45	16	0	0	0	16	0	0	0	0	0	61
Grand Total	0	171	0	0	171	62	0	0	0	62	0	0	0	0	0	**233**
Approach%	0%	100%	0%		-	100%	0%	0%		-	0%	0%	0%		-	**-**
Totals %	0%	73.4%	0%		73.4%	26.6%	0%	0%		26.6%	0%	0%	0%		0%	**-**
PHF	0	0.93	0		0.93	0.97	0	0		0.97	0	0	0		0	**-**
Heavy	0	1	0		1	3	0	0		3	0	0	0		0	**-**
Heavy %	0%	0.6%	0%		0.6%	4.8%	0%	0%		4.8%	0%	0%	0%		0%	**-**
Lights	0	170	0		170	59	0	0		59	0	0	0		0	**-**
Lights %	0%	99.4%	0%		99.4%	95.2%	0%	0%		95.2%	0%	0%	0%		0%	**-**
Single-Unit Trucks	0	1	0		1	1	0	0		1	0	0	0		0	**-**
Single-Unit Trucks %	0%	0.6%	0%		0.6%	1.6%	0%	0%		1.6%	0%	0%	0%		0%	**-**
Buses	0	0	0		0	2	0	0		2	0	0	0		0	**-**
Buses %	0%	0%	0%		0%	3.2%	0%	0%		3.2%	0%	0%	0%		0%	**-**
Articulated Trucks	0	0	0		0	0	0	0		0	0	0	0		0	**-**
Articulated Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	**-**

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 04:00 PM - 05:00 PM Weather: Clear Sky (23.75 °C)

Start Time	N Approach TORBRAM RD					S Approach TORBRAM RD					W Approach GOLF CLUB MAINTENANCE ACCESS					Int. Total (15 min)
	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	
16:00:00	0	20	0	0	20	64	0	0	0	64	1	0	0	0	1	85
16:15:00	0	22	0	0	22	61	0	0	0	61	0	0	0	0	0	83
16:30:00	0	26	0	0	26	60	1	0	0	61	1	0	0	0	1	88
16:45:00	0	22	0	0	22	56	0	0	0	56	0	0	0	0	0	78
Grand Total	0	90	0	0	90	241	1	0	0	242	2	0	0	0	2	**334**
Approach%	0%	100%	0%		-	99.6%	0.4%	0%		-	100%	0%	0%		-	**-**
Totals %	0%	26.9%	0%		26.9%	72.2%	0.3%	0%		72.5%	0.6%	0%	0%		0.6%	**-**
PHF	0	0.87	0		0.87	0.94	0.25	0		0.95	0.5	0	0		0.5	**-**
Heavy	0	5	0		5	4	0	0		4	0	0	0		0	**-**
Heavy %	0%	5.6%	0%		5.6%	1.7%	0%	0%		1.7%	0%	0%	0%		0%	**-**
Lights	0	85	0		85	237	1	0		238	2	0	0		2	**-**
Lights %	0%	94.4%	0%		94.4%	98.3%	100%	0%		98.3%	100%	0%	0%		100%	**-**
Single-Unit Trucks	0	1	0		1	1	0	0		1	0	0	0		0	**-**
Single-Unit Trucks %	0%	1.1%	0%		1.1%	0.4%	0%	0%		0.4%	0%	0%	0%		0%	**-**
Buses	0	2	0		2	3	0	0		3	0	0	0		0	**-**
Buses %	0%	2.2%	0%		2.2%	1.2%	0%	0%		1.2%	0%	0%	0%		0%	**-**
Articulated Trucks	0	2	0		2	0	0	0		0	0	0	0		0	**-**
Articulated Trucks %	0%	2.2%	0%		2.2%	0%	0%	0%		0%	0%	0%	0%		0%	**-**

APPENDIX B

ENVIRONMENTAL NOISE CRITERIA

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

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.

ROAD TRAFFIC NOISE

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

APPENDIX C-1
SAMPLE CALCULATION OF SOUND LEVEL

FILE: 22-099
NAME: Mayfield Golf Course Re-Development
REFERENCE DRAWINGS: Preliminary Draft Plan
LOCATION: Lot 164, 1.5 m above grade, **rear yard**

Noise Source:	Street B
Angle of Exposure:	-65 to 28
Time Period:	16 hr. (day)
Distance (m):	21.03

CALCULATION OF SOUND LEVEL*

Reference Leq (dBA)*:	61.07
Height and/or Distance Correction (dBA):	-2.44
Finite Element Correction (dBA):	-3.36
Allowance for Screening (dBA):	0.00
Allowance for Future Growth (dBA):	incl.
LeqDay (dBA):	55.27

* Leq determined using the computerized model of the Ontario Ministry of the Environment and Climate Change Noise Assessment Guidelines, STAMSON Version 5.04 (ORNAMENT). See attached printouts.

```
STAMSON 5.0        NORMAL REPORT        Date: 30-09-2024 12:21:58
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: lot164ry.te          Time Period: Day 16hours
Description: Lot 164 rear yard

Road data, segment # 1: Street B (day)
-----------------------------------
Car traffic volume  :  4623 veh/TimePeriod  *
Medium truck volume :    47 veh/TimePeriod  *
Heavy truck volume  :    47 veh/TimePeriod  *
Posted speed limit  :    60 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):   5241
    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 B (day)
-----------------------------------
Angle1   Angle2           : -65.00 deg   28.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  21.03 m
Receiver height           :   1.50 m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: Street B (day)
-----------------------------------

Source height = 1.00 m

ROAD (0.00 + 55.27 + 0.00) = 55.27 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -65     28   0.66  61.07   0.00  -2.44  -3.36   0.00   0.00   0.00  55.27
-------------------------------------------------------------------------------

Segment Leq : 55.27 dBA


Total Leq All Segments: 55.27 dBA
```

APPENDIX C-2
SAMPLE CALCULATION OF SOUND LEVEL

FILE: 22-099
NAME: Mayfield Golf Course Re-Development
REFERENCE DRAWINGS: Preliminary Draft Plan
LOCATION: Block 279, front wall, fourth storey

Noise Source:	Torbram Road	Street B
Angle of Exposure:	-90 to 90	-38 to 0
Time Period:	16 hr. (day)	16 hr. (day)
Distance (m):	19.87	22.81

CALCULATION OF SOUND LEVEL*

Reference Leq (dBA)*:	69.41	61.07
Height and/or Distance Correction (dBA):	-1.72	-2.56
Finite Element Correction (dBA):	-1.00	-6.58
Allowance for Screening (dBA):	0.00	0.00
Allowance for Future Growth (dBA):	incl.	incl.
LeqDay (dBA):	66.69	51.93
Combined LeqDay (dBA)	66.83	

* Leq determined using the computerized model of the Ontario Ministry of the Environment and Climate Change Noise Assessment Guidelines, STAMSON Version 5.04 (ORNAMENT). See attached printouts.

APPENDIX C-3
SAMPLE CALCULATION OF SOUND LEVEL

FILE: 22-099
NAME: Mayfield Golf Course Re-Development
REFERENCE DRAWINGS: Preliminary Draft Plan
LOCATION: Block 279, front wall, fourth storey

Noise Source:	Torbram Road	Street B
Angle of Exposure:	-90 to 90	-38 to 0
Time Period:	8 hr. (night)	8 hr. (night)
Distance (m):	19.87	22.81

CALCULATION OF SOUND LEVEL*

Reference Leq (dBA)*:	62.88	54.47
Height and/or Distance Correction (dBA):	-1.72	-2.56
Finite Element Correction (dBA):	-1.00	-6.58
Allowance for Screening (dBA):	0.00	0.00
Allowance for Future Growth (dBA):	incl.	incl.
LeqNight (dBA):	60.16	45.33
Combined LeqNight (dBA)	60.30	

* Leq determined using the computerized model of the Ontario Ministry of the Environment and Climate Change Noise Assessment Guidelines, STAMSON Version 5.04 (ORNAMENT). See attached printouts.

```
STAMSON 5.0        NORMAL REPORT        Date: 30-09-2024 12:24:22
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: blk279br.te          Time Period: Day/Night 16/8 hours
Description: Block 279 east facade

Road data, segment # 1: Torbram Road (day/night)
-----------------------------------------------
Car traffic volume  : 16113/1790  veh/TimePeriod  *
Medium truck volume :   297/33    veh/TimePeriod  *
Heavy truck volume  :    99/11    veh/TimePeriod  *
Posted speed limit  :    80 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):  18344
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   1.80
    Heavy Truck  % of Total Volume     :   0.60
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Torbram Road (day/night)
-----------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  19.87 / 19.87  m
Receiver height           :  10.50 / 10.50  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Street B (day/night)
-----------------------------------------------
Car traffic volume  :  4623/514   veh/TimePeriod  *
Medium truck volume :    47/5     veh/TimePeriod  *
Heavy truck volume  :    47/5     veh/TimePeriod  *
Posted speed limit  :    60 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):   5241
    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 # 2: Street B (day/night)
-----------------------------------------------
Angle1   Angle2           : -41.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  22.81 / 22.81  m
Receiver height           :  10.50 / 10.50  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

```
Results segment # 1: Torbram Road (day)
---------------------------------------

Source height = 0.88 m

ROAD (0.00 + 66.69 + 0.00) = 66.69 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.41  69.41   0.00  -1.72  -1.00   0.00   0.00   0.00  66.69
-------------------------------------------------------------------------------

Segment Leq : 66.69 dBA

Results segment # 2: Street B (day)
-----------------------------------

Source height = 1.00 m

ROAD (0.00 + 51.93 + 0.00) = 51.93 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -41      0   0.41  61.07   0.00  -2.56  -6.58   0.00   0.00   0.00  51.93
-------------------------------------------------------------------------------

Segment Leq : 51.93 dBA

Total Leq All Segments: 66.83 dBA

Results segment # 1: Torbram Road (night)
-----------------------------------------

Source height = 0.88 m

ROAD (0.00 + 60.16 + 0.00) = 60.16 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.41  62.88   0.00  -1.72  -1.00   0.00   0.00   0.00  60.16
-------------------------------------------------------------------------------

Segment Leq : 60.16 dBA

Results segment # 2: Street B (night)
-------------------------------------

Source height = 0.99 m

ROAD (0.00 + 45.33 + 0.00) = 45.33 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -41      0   0.41  54.47   0.00  -2.56  -6.58   0.00   0.00   0.00  45.33
-------------------------------------------------------------------------------

Segment Leq : 45.33 dBA

Total Leq All Segments: 60.30 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 66.83
                           (NIGHT): 60.30
```

APPENDIX D

SAMPLE CALCULATION OF ARCHITECTURAL COMPONENT SELECTION

APPENDIX D-1
SAMPLE CALCULATION OF ARCHITECTURAL COMPONENT SELECTION*

FILE: 22-099
NAME: Mayfield Golf Course Re-Development
REFERENCE DRAWINGS: Preliminary Draft Plan
LOCATION: Block 279, Fourth Storey Corner Bedroom

ROAD

Wall area as a percentage of floor area:	Front:	55%
	Side:	55%
Window area as a percentage of floor area:	Front:	25%
	Side:	25%
Number of components:	4	
Outdoor Leq:	Front:	67 (+3 for reflections) = 70 dBA
	Side:	64 (+3 for reflections) = 67 dBA
Indoor Leq:	45 dBA	
Noise Reduction (dBA):	Front:	25
	Side:	22
Noise Spectrum:	Road/Distant Aircraft	Angle Correction: 0
Absorption:	Medium	

APPROPRIATE ELEMENTS

		STC Rating
Wall	Front	STC 36**
	Side	STC 33**
Window	Front	STC 28**
	Side	STC 25**

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

** The STC ratings shown will be met by standard construction techniques (i.e. construction that achieves the minimum structural and safety requirements of building requirements that are unrelated to acoustics).