PRELIMINARY NOISE IMPACT STUDY

MAYFIELD WEST PHASE 2 STAGE 3 LANDS

SETTLEMENT AREA BOUNDARY EXPANSION

TOWN OF CALEDON

PREPARED FOR

CALEDON DEVELOPMENT GENERAL PARTNER LTD.
SCHOOL WEST INVESTMENTS INC.
SCHOOL VALLEY DEVELOPMENTS INC.
SCHOOL VALLEY SOUTH LTD.
BROOKVALLEY DEVELOPMENTS (HWY 10) LTD.
(C/O BROOKVALLEY PROJECT MANAGEMENT INC.)

JULY 15TH 2022

CANDEVCON LIMITED
CONSULTING ENGINEERS & PLANNERS
TEL (905) 794-0600 FAX (905) 794-0611

PROJECT NO. W22043

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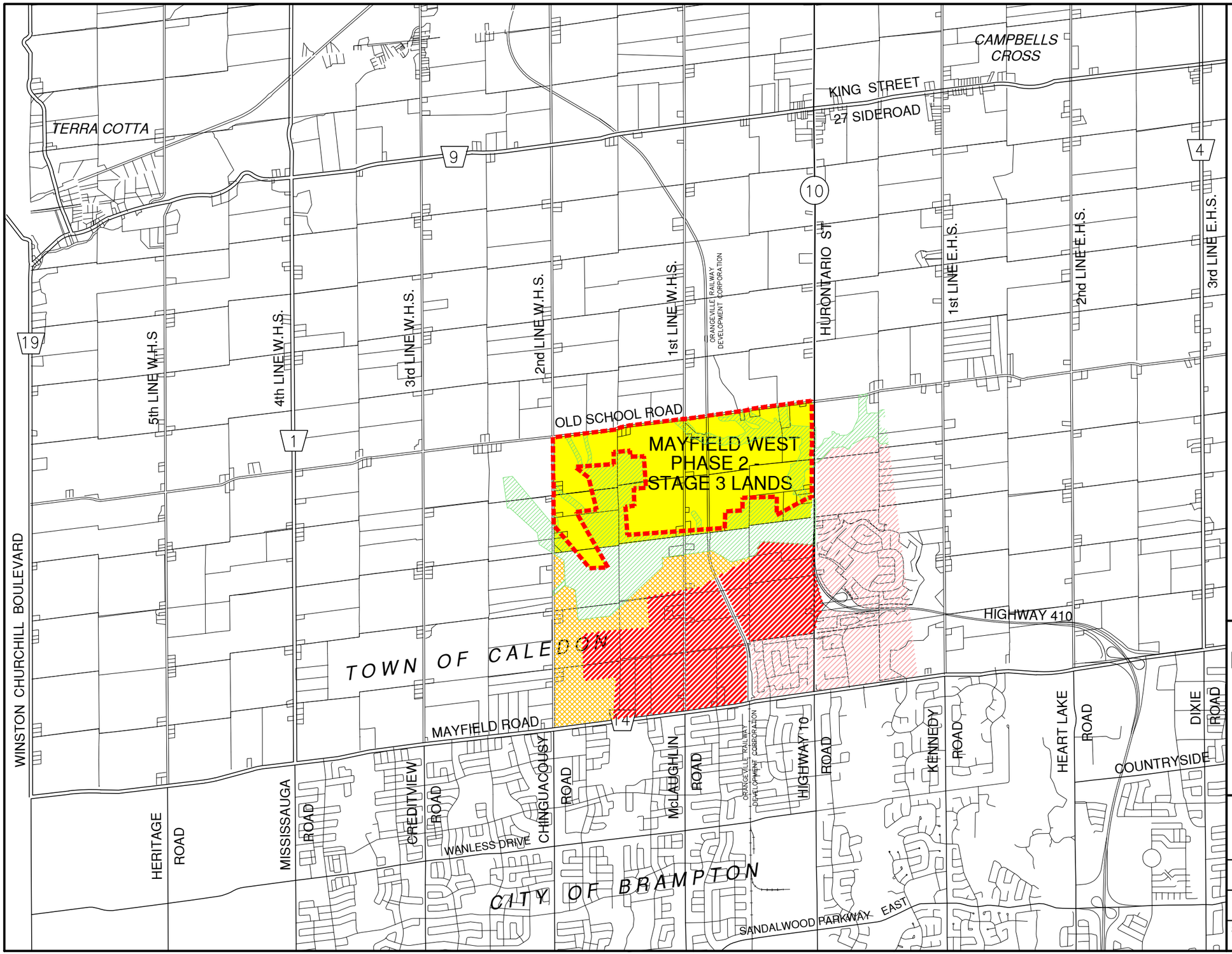
1. INTRODUCTION

This Preliminary Noise Impact Study for the Mayfield West Phase 2 Stage 3 Settlement Area Boundary Expansion was prepared by CANDEVCON LIMITED on behalf of Brookvalley Project Management Inc. The purpose of the Study is to provide a preliminary assessment on the potential noise impacts to the future residential developments with respect to transportation noise sources and to provide preliminary recommendations with respect to mitigation measures.

The Mayfield West Phase 2 Stage 3 Settlement Area Boundary Expansion is bounded by Old School Road to the north; Hurontario Street, the Greenbelt Plan Area and Mayfield West Phase 1 lands to the east; the Greenbelt Plan Area to the south; and Chinguacousy Road to the west. **Figure 1** illustrates the location of the Subject Lands. The Mayfield West Phase 2 Stage 3 Settlement Area Boundary Expansion is approximately 270 hectares and comprises low density residential, medium density residential and commercial land uses along with two (2) elementary schools. The proposed land uses within the Mayfield West Phase 2 Stage 3 Settlement Area Boundary Expansion are illustrated in **Figure 2**.

This Study defines the projected road and aircraft noise sources and provides preliminary findings and recommendations with respect to projected noise impacts and the noise mitigation requirements.

This Study will also acknowledge the potential impacts due to stationary noise sources.



LEGEND:

- MAYFIELD WEST PHASE 2 - STAGE 3 BOUNDARY
- MAYFIELD WEST PHASE 2 - STAGE 1
- MAYFIELD WEST PHASE 2 - STAGE 2
- MAYFIELD WEST PHASE 2 - STAGE 3
- MAYFIELD WEST PHASE 1

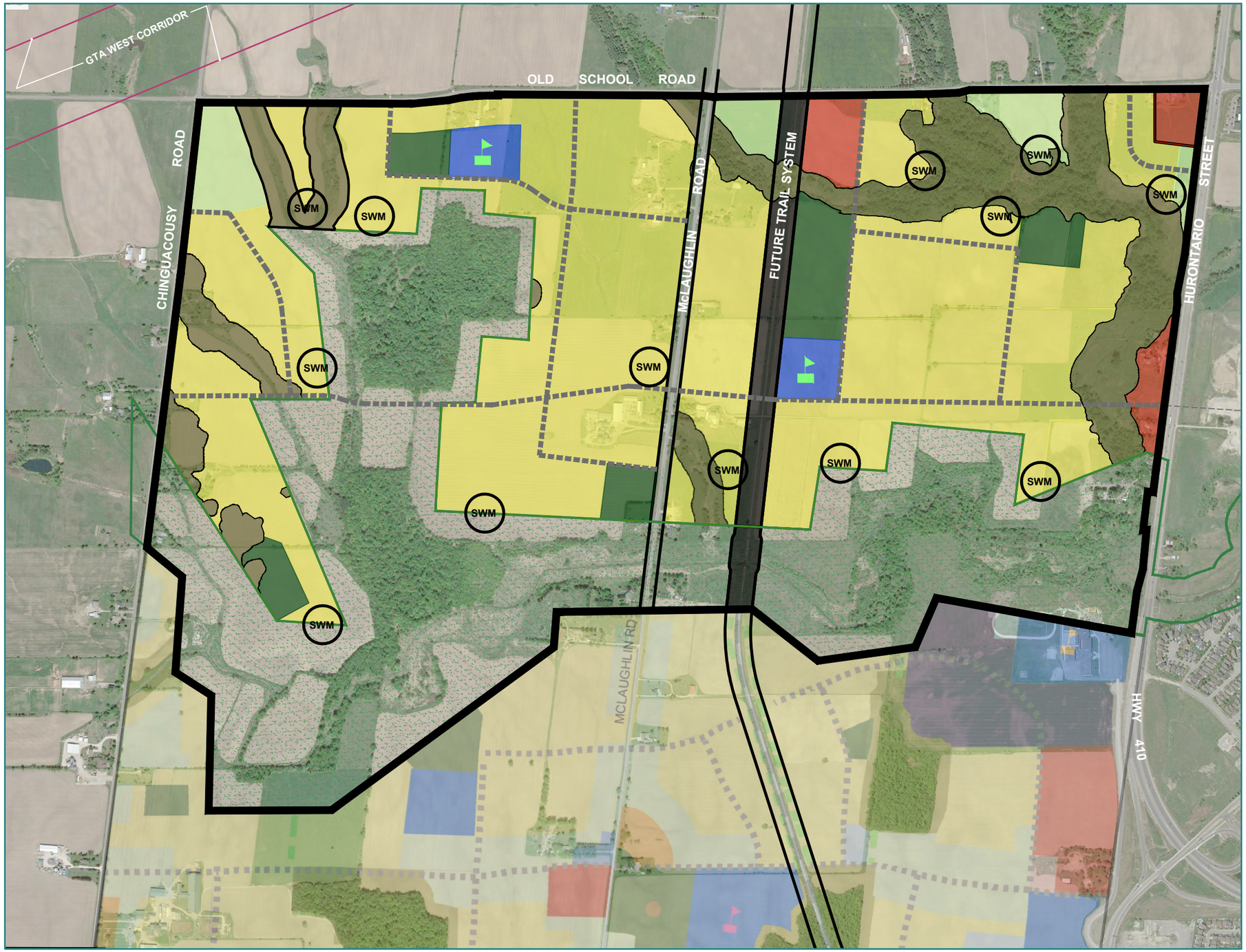
BROOKVALLEY PROJECT MANAGEMENT INC.

LOCATION PLAN

MAYFIELD WEST PHASE 2
STAGE 3 SETTLEMENT AREA
BOUNDARY EXPANSION
TOWN OF CALEDON

CANDEVCON LIMITED
CONSULTING ENGINEERS AND PLANNERS
TEL. (905) 794-0600 FAX (905) 794-0611

DATE	JUNE 14th 2022	PROJECT No	W22043
DRAWN	S.G.K.	FIGURE No.	1
SCALE	1:40,000		



LAND USE

- Mayfield West Phase 2 - Stage 3 Secondary Plan Boundary
- Low Density Residential
- Medium Density Residential
- General Commercial
- Institutional
- Open Space Policy Area
- Stormwater Pond Facility (SWM)
- Collector Roads
- Future Trail System
- Environmental Policy Area
- Boundary of Greenbelt Plan Area
- Elementary School

NOTE:

PROPOSED LAND USES BASED ON
MALONE GIVEN PARSONS FILE No. 21-3130
MAYFIELD WEST - URBAN STRUCTURE PLAN
2022 06 30 Land Use Plan-FINAL.dwg
DATED JUNE 30 2022

MAYFIELD WEST
PHASE 2 - STAGE 3 LANDS
TOWN OF CALEDON

URBAN STRUCTURE CONCEPTUAL PLAN

CANDEVCON LIMITED
CONSULTING ENGINEERS AND PLANNERS
TEL. (905) 794-0600 FAX (905) 794-0611

DATE	JULY 12th 2022	PROJECT No.	W22043
DRAWN	S.G.K.	FIGURE No.	FIGURE 2
SCALE	0m 100 200 300		

J:\CDC-2022 WEST - Files\W22043-MAYFIELD-WEST-OPA-2-3\W22043-CANDEVCON-DRAWINGS\W22043-XREF-JULY-12-2022\W22043-FIGURE-2-URBAN-STRUCTURE-CONCEPT-PLAN-LAND-USE-2022 06 30 Land Use Plan-FINAL.dwg

2. NOISE SOURCES

2.1 Roadway Traffic Noise Sources

The principal roadway noise sources that will impact the proposed residential land uses within the Mayfield West Phase 2 Stage 3 Settlement Area Boundary Expansion are the vehicular traffic on Hurontario Street, McLaughlin Road, Chinguacousy Road, Old School Road and the future Collector Roads. For Hurontario Street, McLaughlin Road, Chinguacousy Road and Old School Road, the projected roadway traffic volumes, the recommended number of lanes and the proposed Road Classification were taken from the Preliminary Transportation Assessment[1] prepared by the BA Group. Excerpts were taken from the memorandum and are provided in **Appendix A**. The memorandum provided the projected traffic volumes for the A.M. and P.M. Peak Hours. To determine the AADT, the Study assumed that the worse-case peak hour volume is 10 percent of the AADT.

Hurontario Street is an arterial road under the jurisdiction of the Ministry of Transportation Ontario (MTO). Currently, it is a five (5) lane roadway with a posted speed limit of 80 km/h and a rural cross section. It is recommended for the roadway to be widened to six (6) lanes and it is anticipated that the speed limit will remain at 80 km/h. In addition, for the purpose of this Study, 10 percent trucks was assumed with a heavy to medium truck ratio of 2.33 (70%/30% split).

McLaughlin Road is a collector road under the jurisdiction of the Town of Caledon. Currently, it is a two (2) lane roadway with a posted speed limit of 80 km/h and a rural cross section. It is recommended for the roadway to be widened to four (4) lanes and it is anticipated that the speed limit will be 60 km/h in the future. In addition, for the purpose of this Study, 5 percent trucks was assumed with a medium to heavy truck ratio of 1.5 (60%/40% split).

[1] Mayfield West Phase 2 Stage 3 – Preliminary Transportation Assessment, BA Group, December 21, 2018.

2. NOISE SOURCES (CONT'D)

2.1 Roadway Traffic Noise Sources (Cont'd)

Chinguacousy Road is a collector road under the jurisdiction of the Town of Caledon. Currently, it is a two (2) lane roadway with a posted speed limit of 80 km/h and a rural cross section. It is recommended for the roadway to be widened to four (4) lanes and to be upgraded to an arterial road. It is anticipated that the speed limit will be 60 km/h in the future. In addition, for the purpose of this Study, 5 percent trucks was assumed with a medium to heavy truck ratio of 1.5 (60%/40% split).

Old School Road is a collector road under the jurisdiction of the Town of Caledon. Currently, it is a two (2) lane roadway with a posted speed limit of 70 km/h and a rural cross section. It is recommended for the roadway to be widened to four (4) lanes in the future. In addition, for the purpose of this Study, 5 percent trucks was assumed with a medium to heavy truck ratio of 1.5 (60%/40% split).

The future Collector Roads within the Mayfield West Phase 2 Stage 3 Settlement Area Boundary Expansion were in the preliminary design stages at the time this report was prepared. The right-of-way (ROW) for the future Collector Roads will be determined in the future. From the Preliminary Transportation Assessment prepared by the BA Group, the projected traffic volumes were not given. However, it is anticipated that the collector roads will be sufficient with two-lanes. The future Collector Roads are assumed to have a daily volume of 8,500 vehicles, which is a typical assumption for a collector road. In addition, the assumed speed limit will be 50 km/h and the predicted total percentage of trucks is 2 percent with a ratio of medium to heavy trucks of 19 (95/5 percent split).

Table 1 summarizes the projected traffic volumes used in the analysis.

2. NOISE SOURCES (CONT'D)

2.1 Roadway Traffic Noise Sources (Cont'd)

TABLE 1
PROJECTED (ULTIMATE) ROADWAY TRAFFIC VOLUMES

Road Characteristic	Hurontario Street	McLaughlin Road	Chinguacousy Road	Old School Road	Future Collector Roads
Jurisdiction	MTO	Caledon	Caledon	Caledon	Caledon
Ultimate No. Lanes	6	4	4	4	2
Ultimate AADT	70,000	25,000	16,000	23,000[2] 18,000[3]	8,500[1]
Traffic Speed (See Note 4)	90 km/h	70 km/h	70 km/h	80 km/h	60 km/h
% Trucks **Medium** **Heavy**	3.00% 7.00%	3.00% 2.00%	3.00% 2.00%	3.00% 2.00%	1.90% 0.10%
Day/Night Volume Ratio	90%/10%	90%/10%	90%/10%	90%/10%	90%/10%

Note 1: Typical volume used for Collector Roads.
Note 2: Traffic volume from McLaughlin Road to Hurontario Street.
Note 3: Traffic volume from Chinguacousy Road to McLaughlin Road.
Note 4: The Town of Caledon requires that sound level projections are to assume that traffic is travelling 10 km/h above the speed limit.[2]

[2] Development Standards Manual Version 5.0, Town of Caledon, 2019.

2. NOISE SOURCES (CONT'D)

2.1.1 Roadway Traffic Noise Sources – Highway 413 (GTA West Corridor)

The design of Highway 413 (GTA West Corridor) is in its preliminary stages and the alignment of the corridor has yet to be finalized. The final alignment of Highway 413 will be influenced by future development applications within the vicinity of the Mayfield West Phase 2 Stage 3 Settlement Area Boundary Expansion.

2.2 Railway Noise

The Orangeville-Brampton Railway, which is currently within the vicinity of the Mayfield West Phase 2 Stage 3 Settlement Area Boundary Expansion, travels in the north-south direction and is approximately 200 metres east of McLaughlin Road. Recently, ownership of the railway has been transferred from the Town of Orangeville to the Region of Peel. The railway system has been decommissioned and the Region of Peel has plans to construct a future Trail System within the ROW. Therefore, an assessment due to the impacts from railway noise sources is no longer applicable.

2. NOISE SOURCES (CONT'D)

2.3 Aircraft Noise

A figure illustrating the location of the 2023 Noise Exposure Forecast and the 2028 Noise Exposure Projection contours for the Brampton Flight Centre in relation to Mayfield West Phase 2 was taken from the 2nd Response to Region of Peel Comments to the Addendum to Environmental Noise Vibration Impact Assessment for Mayfield West Phase 2 Stage 2 – Secondary Plan Part B Evaluation of Land-Use Options; which was prepared by Jade Acoustics and dated July 26, 2018[3]. The figure prepared by Jade Acoustics is provided in **Appendix B**. The 2023 NEF/2028 NEP contours have been reviewed by the Brampton Flight Centre and by Transport Canada. However, the final approved contours should be used in the noise study that is to be submitted for draft plan approval.

Within the Mayfield West Phase 2 Stage 3 Settlement Area Boundary Expansion, between McLaughlin Road and Hurontario Street, there may be some land uses that will be exposed to aircraft noise with NEP/NEF values greater than or equal to 25.

[3] 2nd Response to Region of Peel Comments – Addendum to Environmental Noise Vibration Impact Assessment, Mayfield West Phase 2 Stage 2 – Secondary Plan Part B Evaluation of Land-Use Options, Jade Acoustics, July 26, 2018.

2. NOISE SOURCES (CONT'D)

2.4 Stationary Noise Sources

As illustrated in **Figure 2**, commercial land uses and elementary schools within the vicinity of residential land uses are proposed for the Mayfield West Phase 2 Stage 3 Settlement Area Boundary Expansion.

For commercial developments, it is recommended that noise impact analyses be undertaken when Site Plans and detailed information become available to assess the impacts on the adjacent and/or nearby residential land uses and to identify the necessary mitigation measures.

For dwelling units that are immediately adjacent to an Elementary School Block, a warning clause will be required on all titles and deed to the property to inform the purchasers of the potential noise that may be audible at times.

3. NOISE CRITERIA

Noise impacts from the sources mentioned in Section 2.0 were assessed using the principles and procedures in the Ministry of the Environment, Conservation and Park's (MECP) Environmental Noise Guideline[4].

For the assessment of impacts due to transportation (roadway and aircraft) and stationary noise sources, the sound level projections will be determined separately.

For sound level projections, when considering roadway noise sources, the sound level criteria for an outdoor living area and ventilation requirements is summarized in **Table 2**.

TABLE 2

REGION OF PEEL OUTDOOR NOISE CRITERIA (ROAD TRAFFIC)

Location	Outdoor
Outdoor Living Area	55 dBA (7 am - 11 pm) L_{eq} (16 hour)
Bedroom Window	50 dBA (11 pm - 7 am) L_{eq} (8 hour)
Living Room Window	55 dBA (7 am - 11 pm) L_{eq} (16 hour)

[4] Environmental Noise Guideline, Stationary and Transportation Sources -Approval and Planning, Publication NPC-300, Ministry of the Environment, Conservation and Parks , August 2013 and General Guidelines for the Preparation of Acoustical Reports in the Region of Peel- November 2012.

3. NOISE CRITERIA (CONT'D)

For noise projections, when considering aircraft noise sources, the sound level criteria in reference to NEF/NEP values is summarized in **Table 3**.

TABLE 3

MECP OUTDOOR NOISE CRITERIA FOR RESIDENTIAL LAND USE (AIRCRAFT)

NEF/NEP	AIR CONDITIONING	FORCED AIR VENTILATION	WARNING CLAUSE	OLA PERMITTED	UPGRADED BUILDING COMPONENTS
<25	-	-	-	Yes	-
25-30	-	Yes	-	Yes	Yes
>30[1]	Yes	-	Yes	No	Yes

Note 1: Noise criteria refers to redevelopments or infill developments. New residential developments are prohibited in these lands.

For the requirement of upgraded building components, for the analysis of noise impacts due to transportation noise sources, the indoor noise criteria for residential land use is summarized in **Table 4**.

TABLE 4

MECP INDOOR NOISE CRITERIA FOR RESIDENTIAL LAND USE

Time Period	Road	Aircraft
Daytime (7 am - 11 pm)	45 dBA L_{eq} (16 hour)	31 dBA L_{eq} (16 hour)
Night-time (11 pm - 7 am)	40 dBA L_{eq} (8 hour)	31 dBA L_{eq} (8 hour)

3. NOISE CRITERIA (CONT'D)

In summary, an outdoor living area (OLA) in a residential development generally refers to a rear yard, a rooftop and a patio or a balcony having a minimum depth of 4 metres.

When considering roadway noise sources, in cases where the daytime sound levels in the outdoor living area exceed 60 dBA L_{eq}, noise mitigation measures such as barriers are required to attenuate the sound levels to 60 dBA L_{eq} or less (55 dBA L_{eq} being the desired level). After noise mitigation measures are implemented, if the sound levels exceed the noise criteria by no more than 5 dBA due to technical, economic or administrative reasons, a warning clause in all Offers of Purchase and Sale for the specific lot/unit is required. Where the sound levels exceed the noise criteria by no more than 5 dBA, noise mitigation measures to attenuate the sound levels to the desired 55 dBA L_{eq} limit can be implemented or a warning clause in all Offers of Purchase and Sale for the specific lot/unit is required. As a part of the Town of Caledon requirements, where the noise attenuating barrier is adjacent to public property, a warning clause in the Development Agreement and in all Offers of Purchase and Sale for the specific lots/units are required. The wording of such warning clauses is provided in **Appendix D**. In addition, it should be noted that the outdoor daytime sound level requirements for the Town of Caledon are more conservative than the outdoor daytime sound level requirements for the MECP, which is being applied in this Study. If the Town of Caledon does not approve the application of MECP requirements for outdoor living areas at a residential development within the Mayfield West Phase 2 Stage 3 Settlement Area Boundary Expansion, then the residential development will adhere to the outdoor daytime sound level requirements set forth by Town of Caledon.

In addition, the MECP have ventilation requirements which are based on the sound level at the exterior building facade.

3. NOISE CRITERIA (CONT'D)

When analysing the noise impacts due to roadway noise sources, where the daytime (7:00-23:00) sound levels in the plane of a bedroom or living/dining room window are greater than 65 dBA L_{eq} and/or where the night-time (23:00-7:00) sound levels in the plane of a bedroom or living/dining room window are greater than 60 dBA L_{eq}, mandatory central air conditioning for the specific lots/units is required. Where daytime (7:00-23:00) sound levels in the plane of a bedroom or living/dining room window are greater than 55 dBA L_{eq} and less than or equal to 65 dBA L_{eq}, and/or where night-time (23:00-7:00) sound levels in the plane of a bedroom or living/dining room window are greater than 50 dBA L_{eq} and less than or equal to 60 dBA L_{eq}, forced air heating with provision for central air conditioning for the specific lots/units is required.

When analysing the noise impacts due to aircraft noise sources, ventilation requirements are not needed for residential developments with an aircraft NEF/NEP value that is less than 25. For residential developments with an aircraft NEF/NEP value greater than or equal to 25 and less than 30, forced air heating with provision for central air conditioning is required.

The indoor sound levels due to transportation noise sources must not exceed the limits provided in **Table 4** as a result of the criterion set forth by the MECP. When the building components, as per standard construction requirements that comply with the minimum structural and safety requirements of the Ontario Building Code (OBC), are not able to attenuate the sound levels to meet the criterion, upgraded building components (mainly windows and walls) are required.

3. NOISE CRITERIA (CONT'D)

When analysing the noise impacts due to roadway noise sources, where the daytime sound levels outside the bedroom or living/dining room window exceed 65 dBA L_{eq} and/or the night-time sound levels outside the bedroom or living/dining room window exceed 60 dBA L_{eq}, upgraded building components including windows, walls and doors, where applicable, should be designed so that the indoor sound levels comply with the sound level limit criteria specified in **Table 4**.

When analysing the noise impacts due to aircraft noise sources, for residential developments with an aircraft NEF/NEP value greater than or equal to 25 and less than 30, upgraded building components including windows, walls, roofs and doors, where applicable, should be designed so that the indoor sound levels comply with the sound level limit criteria specified in **Table 4**.

Finally, if special building components are required as a result of any of the transportation noise sources mentioned in this section, the minimum special building component requirements must also take into account the logarithmic sum of all sound levels from each transportation noise source.

For stationary noise sources, the Mayfield West Phase 2 Stage 3 Settlement Area Boundary Expansion will be classified as a Class 1 area since background sound will be significantly attributed to road traffic. The criteria for stationary noise sources at a Class 1 area are summarized in **Table 5**.

3. NOISE CRITERIA (CONT'D)

TABLE 5

MECP NOISE CRITERIA (STATIONARY NOISE)

Location	Outdoor
Outdoor Living Area	50 dBA (7 am - 11 pm) L_{eq} (16 hour)
Bedroom Window	45 dBA (11 pm - 7 am) L_{eq} (8 hour)
Living Room Window	50 dBA (7 am - 11 pm) L_{eq} (16 hour)

The one-hour equivalent sound level limit for stationary noise sources is the worst-case between the sound levels provided in **Table 5** and the background sound levels.

4. PRELIMINARY NOISE ASSESSMENT

At the time this report was prepared, a block plan was not available for the Mayfield West Phase 2 Stage 3 Settlement Area Boundary Expansion. This Study will provide a preliminary noise assessment that will outline what is to be expected in terms of noise mitigation requirements when a noise impact assessment is conducted with a proposed Draft Plan.

4.1 Outdoor Living Area

For dwelling units flanking a collector road, the sound levels at the outdoor living area during the daytime will exceed the noise criteria by no more than 5 dBA. Therefore, noise mitigation measures to attenuate the sound levels to the desired 55 dBA L_{eq} limit can be implemented or a warning clause in all Offers of Purchase and Sale for the specific lot/unit is required. For dwelling units that are adjacent to and fully exposed to a collector road, the sound levels at the outdoor living area during the daytime may exceed 60 dBA. An acoustic fence will attenuate the outdoor daytime sound level to within the desired 55 dBA L_{eq} limit

For dwelling units adjacent to McLaughlin Road, Chinguacousy Road or Old School Road, it is anticipated that the sound levels during the daytime for the outdoor living area will exceed 60 dBA L_{eq} if the outdoor living area is partially or fully exposed to the roadway. It is anticipated that acoustic barriers can attenuate the sound levels to the desired 55 dBA L_{eq} limit. However, if the attenuated outdoor daytime sound level exceeds the criteria by no more than 5 dBA due to technical, economic or administrative reasons, a warning clause in all Offers of Purchase and Sale for the specific lot/unit is required.

If the dwelling unit that is adjacent to McLaughlin Road, Chinguacousy Road or Old School Road has an outdoor living area that is fully protected by a building envelope, the outdoor daytime sound level will be within the desired 55 dBA L_{eq} limit.

4. PRELIMINARY NOISE ASSESSMENT (CONT'D)

4.1 Outdoor Living Area (Cont'd)

For the outdoor living areas within 50 metres of McLaughlin Road, Chinguacousy Road or Old School Road that are not fully protected, it is anticipated that the projected sound levels during the daytime will either exceed the noise criteria by no more than 5 dBA L_{eq} or be below the desired 55 dBA L_{eq} limit.

For dwelling units adjacent to Hurontario Street, it is anticipated that the sound levels during the daytime for the outdoor living area will exceed 60 dBA L_{eq}. In addition, it is anticipated that noise attenuation may not be able to lower the projected sound levels to below 60 dBA L_{eq}. If the sound levels are greater than 60 dBA L_{eq} after attenuation, an outdoor living area will not be permitted. For the outdoor living areas that are within 75 metres of Hurontario, the sound levels during the daytime are anticipated to be greater than 60 dBA L_{eq}. The sound levels may exceed the noise criteria by no more than 5 dBA after acoustic barriers are implemented. Therefore, a warning clause in all Offers of Purchase and Sale may be required.

4. PRELIMINARY NOISE ASSESSMENT (CONT'D)

4.2 Ventilation Requirements

The noise impact assessment must consider the noise projections with respect to roadway noise sources and the noise projections with respect to aircraft noise sources.

It is anticipated that, for dwelling units adjacent to collector roads, the night-time sound levels in the plane of the bedroom or living/dining room window will be greater than 50 dBA L_{eq} and less than or equal to 60 dBA L_{eq} and/or the daytime sound levels in the plane of the bedroom or living/dining room window will be greater than 55 dBA L_{eq} and less than or equal to 65 dBA L_{eq}. Therefore, forced air heating with provision for central air conditioning is required. For the other units within the vicinity of a collector road, when only considering the projected sound level from a collector road, the sound levels will be below the Region of Peel's criteria of 50 dBA L_{eq} (night-time) and 55 dBA L_{eq} (daytime), therefore noise mitigation measures are not required.

4. PRELIMINARY NOISE ASSESSMENT (CONT'D)

4.2 Ventilation Requirements (Cont'd)

For dwelling units adjacent to McLaughlin Road, Chinguacousy Road or Old School Road, if an acoustic barrier (consisting of a fence and a berm) that runs along the arterial road is provided, it is anticipated that the night-time sound levels in the plane of the bedroom or living/dining room window are greater than 50 dBA L_{eq} and less than or equal to 60 dBA L_{eq} and/or the daytime sound levels in the plane of the bedroom or living/dining room window are greater than 55 dBA L_{eq} and less than or equal to 65 dBA L_{eq}. Therefore, forced air heating with provision for central air conditioning will be required. If an acoustic barrier (consisting of a fence and a berm) that runs along the arterial road is not provided for residential developments adjacent to McLaughlin Road, Chinguacousy Road or Old School Road, it is anticipated that the sound levels during the daytime will exceed 65 dBA L_{eq} and/or the sound levels during the night-time will exceed 60 dBA L_{eq}. Therefore, mandatory central air conditioning will be required. For residential developments that are within 50 metres of McLaughlin Road, Chinguacousy Road or Old School Road, forced air heating with provision for central air conditioning may be required due to the daytime and/or night-time sound levels.

4. PRELIMINARY NOISE ASSESSMENT (CONT'D)

4.2 Ventilation Requirements (Cont'd)

For dwelling units adjacent to Hurontario Street, it is anticipated that the sound levels during the daytime will exceed 65 dBA L_{eq} and the sound levels during the night-time will exceed 60 dBA L_{eq}. Therefore, mandatory central air conditioning is required. For residential developments that are within 100 metres of Hurontario, it is anticipated that the night-time sound levels in the plane of the bedroom or living/dining room window are greater than 50 dBA L_{eq} and less than or equal to 60 dBA L_{eq} and/or the daytime sound levels in the plane of the bedroom or living/dining room window are greater than 55 dBA L_{eq} and less than or equal to 65 dBA L_{eq}. Therefore, forced air heating with provision for central air conditioning will be required.

When considering the noise impacts from the Brampton Flight Centre to the exterior building facade of residential developments, for residential developments with an aircraft NEF/NEP value greater than or equal to 25 and less than 30, forced air heating with provision for central air conditioning is required.

The figure provided by Jade Acoustics that illustrates the lands within the 2023 NEF/2028 NEP composite noise contours is attached in **Appendix B**.

4. PRELIMINARY NOISE ASSESSMENT (CONT'D)

4.3 Upgraded Building Components

For residential developments, upgraded building components may be required to attenuate the indoor noise levels to the sound level limits summarized in **Table 4**. For the noise impact analysis, sound levels caused by roadway and aircraft noise sources are to be projected individually and are to be projected in combination.

For dwelling units adjacent to Hurontario Street and dwelling units with a building envelope that is immediately adjacent to McLaughlin Road, Chinguacousy Road or Old School Road (no interference from an acoustic barrier consisting of a fence and a berm), it is anticipated that the sound levels during the daytime will exceed 65 dBA L_{eq} and/or the sound levels during the night-time will exceed 60 dBA L_{eq}. Therefore, upgraded building components are required.

When considering the noise impacts from the Brampton Flight Centre to the residential developments, the residential developments with an aircraft NEF/NEP value greater than or equal to 25 and less than 30 will require upgraded building components. The figure provided by Jade Acoustics that illustrates the lands within the 2023 NEF/2028 NEP composite noise contours is attached in **Appendix B**.

Upgraded building component requirements due to a combination of transportation noise sources (roadway and aircraft) are to be analysed in closer detail for draft plan approval.

5. SUMMARY

Transportation noise sources such as roadway and aircraft noise sources along with the potential for stationary noise sources from commercial land uses and elementary schools will impact the Mayfield West Phase 2 Stage 3 Settlement Area Boundary Expansion.

For the Mayfield West Phase 2 Stage 3 Settlement Area Boundary Expansion, with the proposed land use plan, the Preliminary Noise Impact Study assessed the roadway and aircraft data that was derived from background studies to provide the projected noise levels and mitigation requirements.

After reviewing the Preliminary Transportation Assessment prepared by the BA Group, the Preliminary Noise Impact Assessment was able to project the 2041 roadway traffic data for Hurontario Street, McLaughlin Road, Chinguacousy Road, Old School Road and the future Collector Roads within the Mayfield West Phase 2 Stage 3 Settlement Area Boundary Expansion.

The Orangeville-Brampton Railway, with lands within the Mayfield West Phase 2 Stage 3 Settlement Area Boundary Expansion, recently changed ownership from the Town of Orangeville to the Region of Peel. Since the Region of Peel has decommissioned the railway, an assessment due to the impacts from railway noise sources is not required.

The 2023 NEF/2028 NEP composite noise contours for the Brampton Flight Centre were taken from the 2nd Response to Region of Peel Comments to the Addendum to Environmental Noise Vibration Impact Assessment for Mayfield West Phase 2 Stage 2 – Secondary Plan Part B Evaluation of Land-Use Options, which was prepared by Jade Acoustics dated July 26, 2018. After reviewing the location of the 2023 NEF/2028 NEP composite noise contours, it was noted that certain land uses will have an aircraft NEF/NEP value greater than or equal to 25 and less than 30 and a small portion of lands will have an aircraft NEF/NEP value greater than 30.

5. SUMMARY (CONT'D)

For roadway and aircraft noise sources, the anticipated sound levels and the resulting noise mitigation requirements from the Preliminary Noise Impact Assessment are summarized in **Table 6**.

5. SUMMARY (CONT'D)

TABLE 6
SUMMARY OF PRELIMINARY NOISE IMPACT ASSESSMENT

Noise Source	Scenario	Anticipated Sound Level	Anticipated Noise Mitigation Requirement
Future Collector Roads	Lots/units flanking a Collector Road.	• An outdoor daytime sound level between 55 dBA L_{eq} and 60 dBA L_{eq}.	• Noise attenuating wall can attenuate the sound levels to the desired 55 dBA L_{eq} limit. • Warning Clause F if a noise attenuating wall that is adjacent to public property is installed. • Warning Clause A if noise mitigations are not provided.
	Lots/units adjacent to a Collector Road with an OLA that is fully exposed.	• Outdoor daytime sound level will be greater than 60 dBA L_{eq}.	• Noise attenuating wall will attenuate the sound levels to the desired 55 dBA L_{eq} limit. • Warning Clause F if a noise attenuating wall that is adjacent to public property is installed.
	Building façade of lots/units immediately adjacent to a Collector Road.	• Between 55 dBA L_{eq} and 65 dBA L_{eq} for the daytime and/or between 50 dBA L_{eq} and 60 dBA L_{eq} for the night-time.	• Provision for central air conditioning. • Warning Clause C.
McLaughlin Road, Chinguacousy Road and Old School Road	Lots/units adjacent to the Roadway with an OLA that is fully/partially exposed.	• Outdoor daytime sound level will be greater than 60 dBA L_{eq}.	• Noise attenuating barrier required to attenuate sound levels to 60 dBA (55 dBA desired) • Warning Clause B if sound levels exceed the criteria by no more than 5 dBA. • Warning Clause F if a noise attenuating barrier that is adjacent to public property is installed.

Note: The wording of such warning clauses is provided in Appendix D.

5. SUMMARY (CONT'D)

TABLE 6
SUMMARY OF PRELIMINARY NOISE IMPACT ASSESSMENT

Noise Source	Scenario	Anticipated Sound Level	Anticipated Noise Mitigation Requirement
McLaughlin Road, Chinguacousy Road and Old School Road	Lots/units with an OLA that is within 50 metres of the roadway and that is partially/fully exposed.	• The outdoor daytime sound level may be between 55 dBA L_{eq} and 60 dBA L_{eq}.	• If the outdoor daytime sound levels exceed the criteria by no more than 5 dBA, an acoustic barrier or a warning clause must be provided. • Warning Clause F if a noise attenuating barrier that is adjacent to public property is installed. • Warning Clause A if a noise attenuating barrier is not provided.
	Building envelope immediately adjacent to the roadway (no interference from an acoustic barrier).	• Greater than 65 dBA L_{eq} for the daytime and/or greater than 60 dBA L_{eq} for the night-time.	• Mandatory central air conditioning. • Upgraded Building Components. • Warning Clause D.
	Building envelope for lots/units immediately adjacent to the roadway with an acoustic barrier that runs along the arterial road.	• Between 55 dBA L_{eq} and 65 dBA L_{eq} for the daytime and/or between 50 dBA L_{eq} and 60 dBA L_{eq} for the night-time.	• Provision for central air conditioning. • Warning Clause C.
	Building envelope within 50 metres of the roadway	• Potentially between 55 dBA L_{eq} and 65 dBA L_{eq} for the daytime and/or between 50 dBA L_{eq} and 60 dBA L_{eq} for the night-time.	• Provision for central air conditioning. • Warning Clause C.

Note: The wording of such warning clauses is provided in Appendix D.

5. SUMMARY (CONT'D)

TABLE 6
SUMMARY OF PRELIMINARY NOISE IMPACT ASSESSMENT

Noise Source	Scenario	Anticipated Sound Level	Anticipated Noise Mitigation Requirement
Hurontario Street	OLA for lots/units immediately adjacent to the Roadway.	• Outdoor daytime sound level will be greater than 60 dBA L_{eq}.	• Noise attenuating barrier may not be able to attenuate sound levels to within 60 dBA L_{eq}. • OLA is not permitted if attenuated sound levels are greater than 60 dBA L_{eq}.
	An OLA within 75 metres of the roadway	• Outdoor daytime sound level will be greater than 60 dBA L_{eq}.	• Noise attenuating barrier required to attenuate sound levels to 60 dBA (55 dBA desired) • Warning Clause B if outdoor daytime sound levels exceed the criteria by no more than 5 dBA. • Warning Clause F if the noise attenuating barrier is adjacent to public property.
	Building envelope for lots/units immediately adjacent to the Roadway.	• Greater than 65 dBA L_{eq} for the daytime and/or greater than 60 dBA L_{eq} for the night-time.	• Mandatory central air conditioning. • Upgraded Building Components. • Warning Clause D.
	Building envelope for lots/units within 100 metres of the roadway.	• Between 55 dBA L_{eq} and 65 dBA L_{eq} for the daytime and/or between 50 dBA L_{eq} and 60 dBA L_{eq} for the night-time.	• Provision for central air conditioning. • Warning Clause C.
Brampton Flight Centre	With an aircraft NEF/NEP value greater than or equal to 25 and less than 30.	• The Daytime and night-time sound levels will be less than 61 dBA L_{eq} and greater than or equal to 56 dBA L_{eq}.	• Provision for central air conditioning. • Upgraded Building Components. • Warning Clause C.

Note: The wording of such warning clauses is provided in Appendix D.

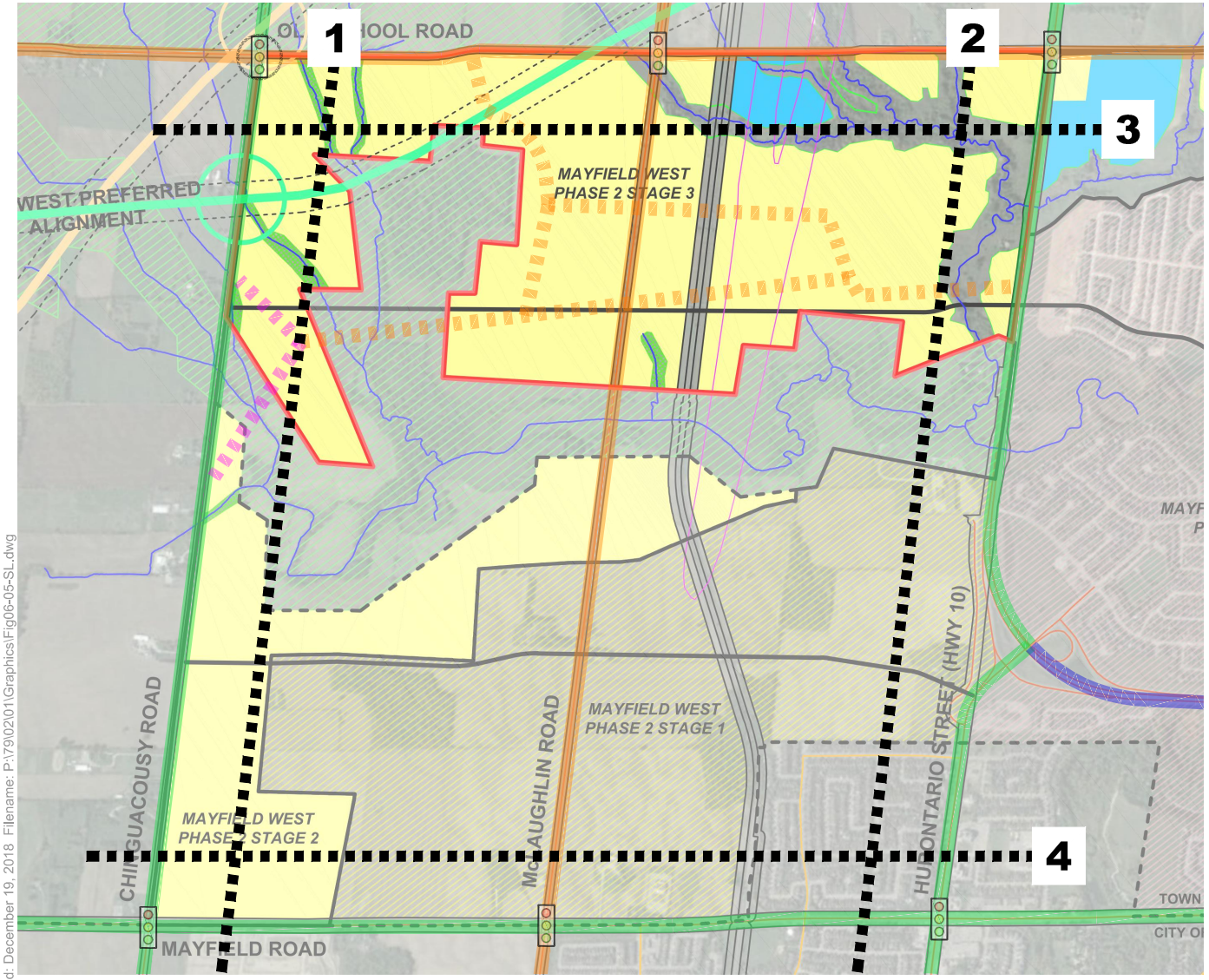
5. SUMMARY (CONT'D)

In addition, for commercial land uses, noise impact analyses are to be conducted when Site Plans and detailed information becomes available to assess the impacts on the adjacent and/or nearby residential developments and to identify the necessary mitigation measures.

For dwelling units that are immediately adjacent to an Elementary School Block, a warning clause will be required on all titles and deed to the property to inform the purchasers of the potential noise that may be audible at times.

APPENDIX A

Excerpts taken from the Preliminary Transportation Assessment Prepared by the BA Group



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SCREENLINE LOCATIONS

BA Group

Mayfield Phase 2 Stage 3
7902-01 December 2018

Figure 6

TABLE 4 2041 SCREENLINE ANALYSIS – WITH RECOMMENDED IMPROVEMENTS

	Future Background - Road Config. Per TMP				Future Total - Road Config. Per TMP				Future Total - With Road Config. Req. for Stage 3			
	Vol	No. of Lanes	Capacity	V/C	Vol	No. of Lanes	Capacity	V/C	Vol	No. of Lanes	Capacity	V/C
SCREENLINE 1: East of Chinguacousy Road												
Old School Road	869 (1,226)	2	1,700	0.51 (0.72)	1,309 (1,776)	2	1,700	0.77 (1.04)	1,309 (1,776)	4	3,400	0.39 (0.52)
Mayfield Road	3,097 (3,029)	5	4,250	0.73 (0.71)	3,172 (3,099)	5	4,250	0.75 (0.73)	3,172 (3,099)	5	4,250	0.75 (0.73)
Overall (Screenline)	**3,966 (4,255)**	**--**	**5,950**	**0.67 (0.72)**	**4,481 (4,875)**	**--**	**5,950**	**0.75 (0.82)**	**4,481 (4,875)**	**--**	**7,650**	**0.59 (0.64)**
SCREENLINE 2: West of Hurontario Street												
Old School Road	1,240 (1,728)	2	1,700	0.73 (1.02)	1,688 (2,258)	2	1,700	0.99 (1.33)	1,688 (2,258)	4	3,400	0.50 (0.66)
Mayfield Road	4,007 (4,473)	6	5,100	0.79 (0.88)	4,077 (4,538)	6	5,100	0.80 (0.89)	4,077 (4,538)	6	5,100	0.80 (0.89)
Overall (Screenline)	**5,247 (6,201)**	**--**	**6,800**	**0.77 (0.91)**	**5,765 (6796)**	**--**	**6,800**	**0.85 (1.00)**	**5,765 (6,796)**	**--**	**8,500**	**0.68 (0.80)**
SCREENLINE 3: South of Old School Road												
Chinguacousy Road	1,158 (1,580)	2	1,700	0.68 (0.93)	1,158 (1,580)	2	1,700	0.68 (0.93)	1,158 (1,580)	4	3,400	0.34 (0.46)
McLaughlin Road	985 (1,500)	2	1,700	0.58 (0.88)	1,758 (2,475)	2	1,700	1.03 (1.46)	1,758 (2,475)	4	3,400	0.52 (0.73)
Hurontario Street	5,834 (6,838)	6	5,100	1.14 (1.34)	5,992 (7,038)	6	5,100	1.17 (1.38)	5,992 (7,038)	6	5,100	1.17 (1.38)
Overall (Screenline)	**7,977 (9,918)**	**--**	**8,500**	**0.94 (1.17)**	**8,907 (11,093)**	**--**	**8,500**	**1.05 (1.31)**	**8,907 (11,093)**	**--**	**11,900**	**0.75 (0.93)**
SCREENLINE 4: North of Mayfield Road												
Chinguacousy Road	737 (826)	2	1,700	0.43 (0.49)	802 (886)	2	1,700	0.47 (0.52)	802 (886)	4	3,400	0.24 (0.26)
McLaughlin Road	1,251 (284)	2	1,700	0.74 (0.17)	1,611 (614)	2	1,700	0.95 (0.36)	1,611 (614)	4	3,400	0.47 (0.18)
Hurontario Street	3,482 (4,060)	6	5,100	0.68 (0.80)	3,577 (4,135)	6	5,100	0.70 (0.81)	3,577 (4,135)	6	5,100	0.70 (0.81)
Overall (Screenline)	**5,470 (5,170)**	**--**	**8,500**	**0.64 (0.61)**	**5,990 (5,635)**	**--**	**8,500**	**0.70 (0.66)**	**5,990 (5,635)**	**-**	**11,900**	**0.50 (0.47)**

6.0 INTERNAL ROAD NETWORK CONSIDERATIONS

A preliminary concept for an internal road network structure has been developed for the purposes of this analysis. The concept features an internal collector road network through the Stage 3 lands. The layout of the collector network was generally derived using the following guiding principals:

- maintaining an intersection spacing of 300-400 metres along the arterial road network;
- minimizing the number of crossings of environmentally sensitive areas;
- achieving at least one collector road connection between arterial streets; and
- providing an internal collector road network with sufficient coverage to allow all units to be within 400 metres of a collector street (and any potential future transit that may run along collector roads).

The corresponding conceptual internal collector network is set out the Road Network Plan (Figure 1).

Based on a preliminary review of traffic volumes, a 2 lane cross-section will be sufficient to accommodate forecast internal traffic volumes with auxiliary lanes provided at arterial-collector intersections.

The detailed configuration of the internal collector roads, including the street pattern, number of roads, alignment, and cross sectional elements will be confirmed through future detailed studies (e.g. a future Secondary Plan / Environmental Assessment processes).

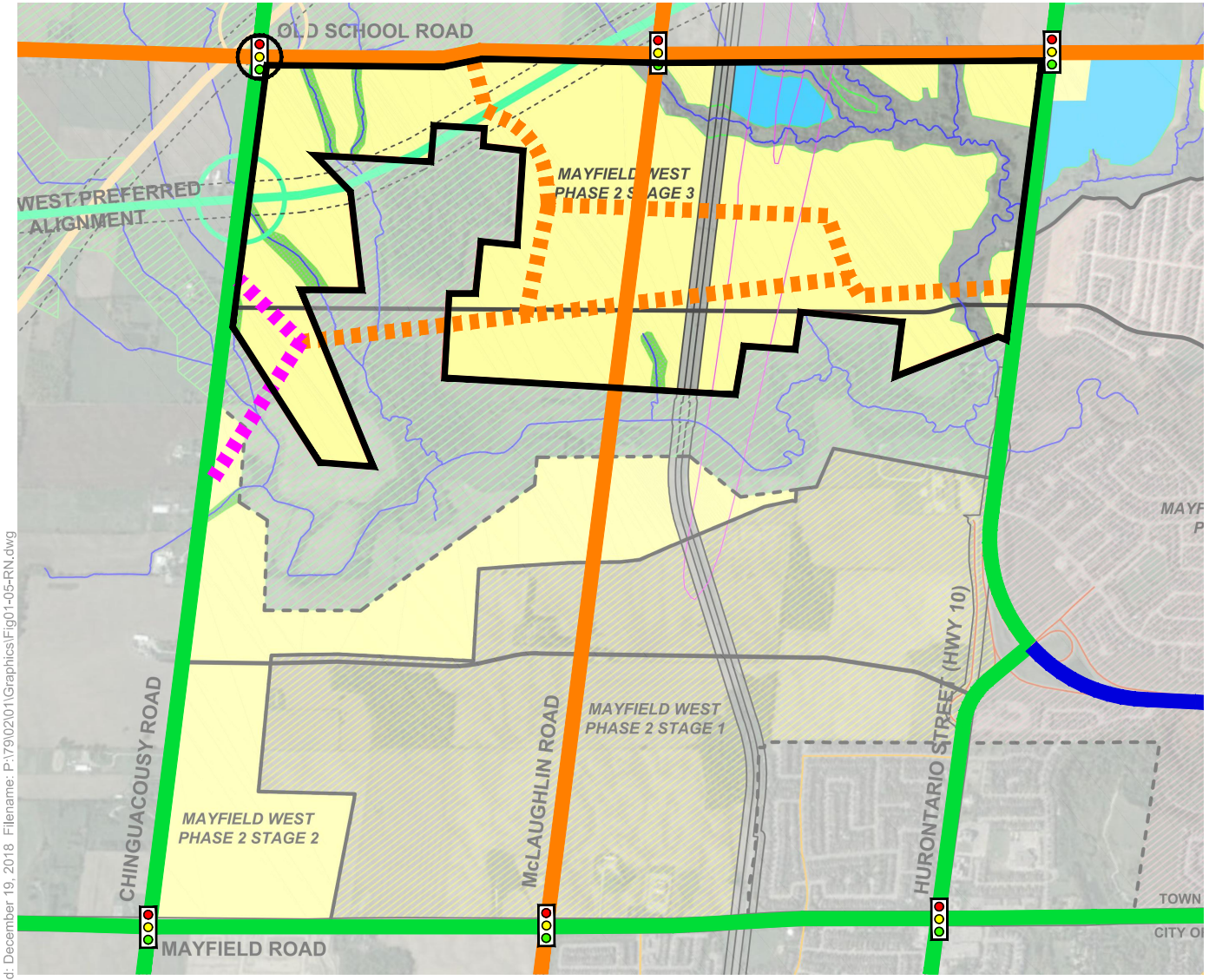
7.0 GTA WEST CORRIDOR CONSIDERATIONS

7.1 BACKGROUND

The province had previously been protecting land along the north edge of the site for a future east-west transportation corridor for new 400 series highway (referred to as the GTA West Corridor) that would link from Highway 400 to Highway 401 and Highway 407 in Halton Hills. In December 2015 the Ministry of Transportation (MTO) suspended work on the Environmental Assessment study for the GTA West Highway corridor pending the results of an advisory panel that was struck to assist the MTO in reviewing the need for the GTA West corridor. Based on the advice of the panel, the Minister of Transportation confirmed that the province will not proceed with any further planning or work on the Environmental Assessment for the highway corridor[3].

Subsequent to the cancellation of the GTA West Highway corridor project, MTO and the Independent Electrical System Operator (IESO) initiated a joint study to identify a smaller corridor that will be protected for future infrastructure needs such as utilities, transit or other transportation options[4]. This study is referred to as the GTA Corridor Identification Study. The intended timeframe for the completion of the GTA Corridor Identification Study is approximately 9-12 months from study initiation which occurred in approximately February 2018.

[3] Source: https://www.gta-west.com/



Stage 3 Boundary

Provincial Freeway

Collector Roadway

High Capacity Arterial Roadway

Proposed Collector Roadway

Potential Connection Options

Signalization recommended per January 2018 TMP Update

Existing Signalized Intersection

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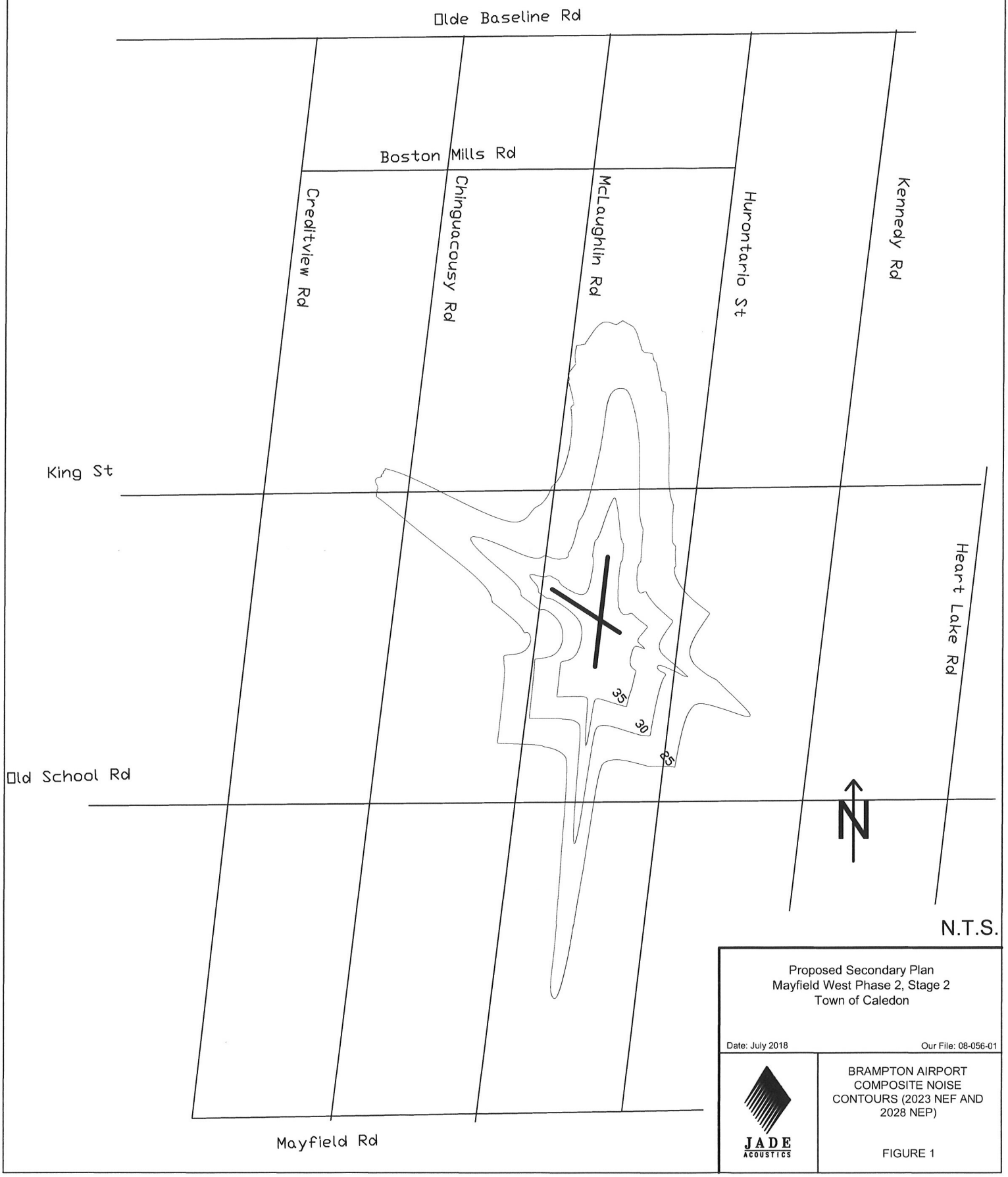
STAGE 3 CONCEPT AND ROAD CLASSIFICATION

APPENDIX B

Brampton Airport Composite Noise Contours (2023 NEF and 2028 NEP)

Prepared by Jade Acoustics



N.T.S.

Proposed Secondary Plan
Mayfield West Phase 2, Stage 2
Town of Caledon

Date: July 2018 Our File: 08-056-01

JADE ACOUSTICS

BRAMPTON AIRPORT COMPOSITE NOISE CONTOURS (2023 NEF AND 2028 NEP)

FIGURE 1

APPENDIX C

Warning Clauses

APPENDIX C
Warning Clauses

Warning Clause "A"

"Purchasers/tenants are advised that sound levels due to increasing road traffic (rail traffic) (air traffic) may occasionally interfere with some activities of the dwelling occupants as the sound levels exceed the sound level limits of the Municipality and the Ministry of the Environment."

Warning Clause "B"

"Purchasers/tenants are advised that despite the inclusion of noise control features in the development and within the building units, sound levels due to increasing road traffic (rail traffic) (air traffic) may on occasions interfere with some activities of the dwelling occupants as the sound levels exceed the sound level limits of the Municipality and the Ministry of the Environment."

Warning Clause "C"

"This dwelling unit has been designed with the provision for adding central air conditioning at the occupant's discretion. Installation of central air conditioning by the occupant in low and medium density developments will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the sound level limits of the Municipality and the Ministry of the Environment."

APPENDIX C

Warning Clauses (Cont'd)

Warning Clause "D"

"This dwelling unit has been supplied with a central air conditioning system which will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the sound level limits of the Municipality and the Ministry of the Environment, Conservation and Parks. The air cooled condenser unit is located in a noise insensitive area and has a maximum ARI rating of 7.6 Bels for 3.5 tons or less."

Warning Clause "E"

"Purchasers/tenants are advised that due to the proximity of the adjacent facility, noise from the facility may at times be audible."

Warning Clause "F"

"Purchasers/tenants are advised that a noise barrier wall is located at the rear/side of this property. The owner of this property also owns his/her section of the noise barrier wall. The noise barrier wall is not in public ownership. Monitoring, maintenance, inspection, repair and replacement of this noise barrier wall, including any associated costs, are the sole responsibility of the property owner. The Town of Caledon is in no way responsible for this noise barrier wall. Should this noise barrier wall fail, it is the property owner's responsibility to repair or replace his/her section of the wall, at his/her cost. If the property owner fails to maintain the noise barrier wall, the Town of Caledon will notify the requirement to repair in writing. If the property owner does not comply with the Town's request, the Town will correct the deficiency and bill the property owner accordingly."