HGC ENGINEERING

Howe Gastmeier Chapnik Limited
2000 Argentia Road, Plaza One, Suite 203
Mississauga, Ontario, Canada L5N 1P7
t: 905.826.4044

Noise Feasibility Study
Proposed Residential Development
800 Yonge Street
Barrie, ON

Prepared for:

Schlegel Villages Inc.
325 Max Becker Drive, Suite 201
Kitchener, Ontario
N2E 4H5

Prepared by

Harry Cai, PEng

Reviewed by

Sheeba Paul, MEng, PEng

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VERSION CONTROL

Noise Feasibility Study, Proposed Residential Development. 800 Yonge Street, Barrie, Ontario

Ver.	Date	Version Description	Prepared By
1.0	June 7, 2024	Noise Feasibility Study for Planning and Approvals Process	H. Cai
1.1	September 26, 2024	Updated Noise Feasibility Study to address City of Barrie comments	H. Cai

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1 Introduction and Summary

HGC Engineering was retained by Schlegel Villages Inc. to conduct a noise and feasibility study for a proposed residential development located at 800 Yonge Street in Barrie, Ontario. The residential development will consist of a 6-storey long term care facility, two 12-storey long term care facilities, and two general market/residential towers, one 26-storeys and one 18-storeys, designated into Phases I through IV. The study is required by Municipality as part of the planning and approvals process.

This study is an update of the previous study, dated June 7, 2024, to include updated rail traffic data from Metrolinx, which are included in Appendix B, and to address City of Barrie comments, which are also included in Appendix F.

The primary source of noise is road traffic on Yonge Street. Secondary sources of noise include road traffic on Mapleview Drive and rail traffic on the GO Transit Newmarket Subdivision. Rail traffic data was obtained from Metrolinx/GO Transit and road traffic data was obtained from the Region of York. Rail and road traffic data was used to predict future traffic sound levels at the proposed building façades and outdoor living areas. The predicted sound levels were compared to the guidelines of the City of Barrie and the Ministry of Environment, Conservation and Parks (MECP) to develop noise control recommendations.

The results of the study indicate that the proposed development is feasible with the noise control measures described in this report. Central air conditioning is required for Phase I, the towers of Phase II/III, and Phase IV A. Forced air ventilation systems with ductwork sized for the future installation of central air conditioning by the occupant are required for the podiums of Phase II/III, and Phase IV B. The installation of central air conditioning for all units will satisfy and exceed ventilation requirements. Upgraded building construction will also be required for all building façades except for the 3-storey buildings of Phase II/III. Noise warning clauses are also required for those units to inform future occupants of the traffic noise impacts, to address sound level excesses, and proximity to existing commercial facilities and the GO Station.

A computational model was created using acoustical modelling software to assess the potential impact of sound emissions from nearby commercial facilities and GO Station on the proposed

development, as well as the impact of the proposed loading area of the proposed development on the residences to the south along Goodwin Drive. The modelling results show that the predicted sound levels from nearby commercial facilities and the GO Station on the proposed development and the sound levels from the proposed loading area to the nearby residences are expected to be within the MECP guideline levels, and mitigation is not required.

2 Site Description and Noise Sources

Figure 1 is a key plan indicating the location of the proposed site. The site is west of Yonge Street and south of Country Lane in Barrie, Ontario. Figure 2 shows the site plan by Anderson Wellsman Architects Inc., dated July 12, 2022. The proposed development will consist of a 6-storey long term care (LTC) facility, two 12-storey long term care facilities, and two general market/residential towers.

HGC Engineering personnel visited the site on July 19, 2022 to make observations of the acoustical environment. During the site visit, it was noted that the primary source of noise impacting the site was road traffic on Yonge Street, with some contribution from Mapleview Road East and the Metrolinx GO Barrie line. Negligible impact from road traffic was observed on Country Lane and Goodwin Drive. The site is currently occupied vacant.

Areas around the site are predominately flat. To the west and south of the site area are existing single detached and multifamily residential dwellings. To the north of the area and across Yonge Street are future residential dwellings. To the east of the site area are vacant lands, and across Yonge Street is the Barrie GO South station which includes a bus terminal, located approximately 80 m away. To the further east of the site area are a car repair shop (Mr. Lube) and a fast-food restaurant with a drive through (Tim Hortons), located approximately 170 m and 200 m away, respectively.

The nearby stationary noise sources include activities at the GO Station, which include moving and idling GO buses, auto repair activities at the auto shop, drive-through queueing activities and rooftop mechanical equipment operations at the fast-food restaurant. Although sound emissions from the nearby commercial and GO Station were not audible at the site during the site visit, a stationary noise assessment has been carried out in Section 6 of the report to assess a worst-case scenario for stationary noise impact.

3 Noise Level Criteria

3.1 Road and Rail Traffic Noise

Guidelines for acceptable levels of road and rail traffic noise impacting residential developments are given in the MECP publication NPC-300, "Environmental Noise Guideline Stationary and Transportation Sources – Approval and Planning", release date October 21, 2013, and are listed in Table I below. The Federation of Canadian Municipalities (FCM) and Railway Association of Canada (RAC) "Guidelines for New Development in Proximity to Railway Operations", dated May 2013 (RAC/FCM guidelines were also reviewed dated November 2006).

The values in Table I are energy equivalent (average) sound levels [L_{EQ}] in units of A-weighted decibels [dBA].

Table I: MECP Traffic Noise Criteria (dBA)

Area	Daytime $L_{EQ\ (16\ hour)}$ Road / Rail	Nighttime $L_{EQ(8\ hour)}$ Road / Rail
Outdoor living area	55 dBA / 55 dBA	--
Inside living/dining rooms of residences/nursing/retirement homes	45 dBA / 40 dBA	45 dBA / 40 dBA
Inside bedrooms/sleeping quarters of residences/nursing/retirement homes	45 dBA / 40 dBA	40 dBA / 35 dBA

Daytime refers to the period between 07:00 and 23:00. Nighttime refers to the time period between 23:00 and 07:00. The term "Outdoor Living Area" (OLA) is used in reference to an outdoor patio, a backyard, a terrace, or other area where passive recreation is expected to occur. Small balconies are not considered OLAs for the purposes of assessment. Terraces greater than 4 m in depth (measured perpendicular to the building façade) are considered to be OLAs.

The guidelines in the MECP publication allow the daytime sound levels in an Outdoor Living Area to be exceeded by up to 5 dBA, without mitigation, if warning clauses are placed in the purchase and rental agreements to the property. Where OLA sound levels exceed 60 dBA, physical mitigation is required to reduce the OLA sound level to below 60 dBA and as close to 55 dBA as technically, economically, and administratively practical.

A central air conditioning system as an alternative means of ventilation to open windows is required for dwellings where nighttime sound levels outside bedroom or living/dining room windows exceed 60 dBA or daytime sound levels outside bedroom or living/dining room windows exceed 65 dBA. Forced-air ventilation with ducts sized to accommodate the future installation of air conditioning is required when nighttime sound levels at bedroom or living/dining room windows are in the range of 51 to 60 dBA or when daytime sound levels at bedroom or living/dining room windows are in the range of 56 to 65 dBA.

Building components such as walls, windows and doors must be designed to achieve indoor sound level criteria when the plane of window nighttime sound level is greater than 60 dBA or the daytime sound level is greater than 65 dBA due to road traffic noise, or when nighttime sound level is greater than 55 dBA or the daytime sound level is greater than 60 dBA due to rail traffic noise. The indoor sound level limits for rail noise sources are 5 dB more stringent than for road sources, to account for the additional low-frequency (rumble) components of locomotives, hence the façade insulation requirements are calculated separately and then combined.

3.2 Ground-borne Vibration from Rail Traffic

Since the proposed development is located more than 75 m away from the Metrolinx Newmarket Subdivision tracks, vibration measurements are not required as per Metrolinx guidelines, which are included as Appendix A.

4 Traffic Sound Level Assessment

4.1 Rail Traffic Data

Rail traffic data for the Metrolinx Newmarket Subdivision was obtained from Metrolinx personnel and is attached in Appendix B. This line is used for passenger trains only. The maximum permissible train speed in the area of the site is 80 km/h (50 mi/h). In conformance with Metrolinx assessment requirements, the maximum speeds, maximum number of cars and locomotives per train were used in the traffic noise analysis to yield a worst-case estimate of train noise. There is an at-grade crossing at Mapleview Drive. Table II summarises the Metrolinx rail traffic data used in the analysis.

Table II: Forecasted Rail Traffic Data

Type of Train	Number of Trains Day / Night	Number of locomotives	Number of cars	Max Speed (KPH)
GO Transit+	94 / 26	2	12	80

+All GO Trains were modelled as diesel trains.

4.2 Road Traffic Data

Traffic data for Yonge Street was obtained from the City of Barrie in the form of projected daily traffic volumes, and is provided in Appendix C. The data was projected to the year 2032 at an annual growth rate of 4 %, as indicated by the City of Barrie staff. A projected volume of 13 000 vehicles per day at a posted speed limit of 60 km/h was applied for the analysis. A commercial vehicle percentage of 3 % for medium trucks and 2 % for heavy trucks was applied. A day/night split of 90 / 10 % was used.

Traffic data for Mapleview Drive was obtained from the City of Barrie and is provided in Appendix C. The data was projected to the year 2032 at an annual growth rate of 6 %, as indicated by the City of Barrie staff. A projected volume of 10 600 vehicles per day at a posted speed limit of 50 km/h was applied for the analysis. A commercial vehicle percentage of 4 % for medium trucks and 3 % for heavy trucks was applied. A day/night split of 90 / 10 % was used.

Table III summarizes the traffic volume data used in this study.

Table III: Ultimate Road Traffic Data

Road Name		Cars	Medium Trucks	Heavy Trucks	Total
Yonge Street	Daytime	11 115	351	234	11 700
	Nighttime	1 235	39	26	1 300
	Total	**12 350**	**390**	**260**	**13 000**
Mapleview Drive	Daytime	8 872	382	286	9 540
	Nighttime	986	42	32	1 060
	Total	**9 858**	**424**	**318**	**10 500**

4.3 Traffic Noise Predictions

To assess the levels of road and rail traffic noise which will impact the study area in the future, sound level predictions were made using STAMSON version 5.04, a computer algorithm developed by the MECP. Sample STAMSON output is included in Appendix D. Train whistling has not been assessed, since whistling was not observed during the site visit and there are anti-whistling by-laws in effect in the vicinity of the site area.

Predictions of the traffic sound levels were chosen around the proposed residential buildings to obtain an appropriate representation of future sound levels at various façades. Sound levels were predicted at the plane of the top storey bedroom and/or living/dining room windows during daytime and nighttime hours to investigate ventilation and façade construction requirements. Sound levels were also predicted in possible OLA's to investigate the need for noise barriers. Figure 2 shows the site plan with prediction locations. The results are summarized in Table IV and V.

Table IV: Daytime Predicted Traffic Sound Levels [dBA], Without Mitigation

Prediction Location	Description	Daytime $L_{EQ-16\ hr}$		Daytime at Façade Total $L_{EQ-16\ hr}$	Daytime in the OLA Total $L_{EQ-16\ hr}$
		Road	Rail		
[A]	Phase I, 6-storey LTC building	64	61	66	--
[B]	Phase II/III, 3-storey podium	64	58	65	--
[C]	Phase II/III, 12-storey buildings	62	63	66	--
[D]	Phase IV A, 26-storey building	65	64	67	--
[E]	Phase IV B, 18-stroey building	58	62	63	
[F]	East parkette area	<55	<55	--	<55
[G]	West courtyard	<55	<55	--	<55

Table V: Nighttime Predicted Traffic Sound Levels [dBA], Without Mitigation

Prediction Location	Description	Nighttime $L_{EQ-8\ hr}$		Nighttime at Façade Total $L_{EQ-8\ hr}$
		Road	Rail	
[A]	Phase I, 6-storey LTC building	58	58	61
[B]	Phase II/III, 3-storey building	57	55	59
[C]	Phase II/III, 12-storey buildings	55	61	62
[D]	Phase IV A, 26-storey building	58	61	63
[E]	Phase IV B, 18-stroey building	51	60	60

5 Traffic Noise Recommendations

The sound level predictions indicate that the future traffic sound levels will exceed MECP guidelines at the proposed development. The following discussion outlines the recommendations for acoustic barrier requirements, ventilation requirements, upgraded building façade construction, and warning clauses to achieve the noise criteria stated in Table I.

5.1 Outdoor Living Areas

The predicted daytime sound levels in the common outdoor amenity areas will be within the MECP's guideline limit of 55 dBA. No mitigation is required.

The dwelling units in the proposed residential buildings are expected to have balconies that are less than 4 m in depth. These areas are not considered to be outdoor living areas under the MECP guidelines, and therefore are exempt from traffic noise assessment. Further assessment is required if balconies or patios greater than 4 m in depth are proposed.

5.2 Minimum Setback Distance

Metrolinx guidelines stipulate a minimum setback distance of 30 m between new dwellings and a principal mainline right of way. The proposed development plans conform to the setback requirement as the nearest façade is located more than 30 m away from the rail right-of-way.

5.3 Indoor Living Areas and Ventilation Requirements

Air Conditioning

The predicted future sound levels outside the top storey windows of the 6-storey Phase I building, the two 12-storey Phase II/III buildings, and the 26-storeys Phase IV A building will be greater than 60 dBA during nighttime hours and greater than 65 dBA during daytime hours. To address these excesses, these units need to be equipped with central air conditioning systems so that windows may remain closed. These units are indicated in Figure 3. Window or through-the-wall air conditioning units are not recommended because of the noise they produce and because the units penetrate through the exterior wall which degrades the overall sound insulating properties of the envelope. The location, installation and sound ratings of the outdoor air conditioning devices should minimize noise impacts and comply with criteria of MECP publication NPC-300, as applicable.

Provision for Air Conditioning

The predicted future sound levels outside the top storey windows of the 3-storey podiums of Phase II/III and the 18-storey Phase IV B building will be between 56 and 65 dBA during daytime hours and between 51 to 60 dBA during nighttime hours. To address these excesses, these dwelling units require provisions for the future installation of central air conditioning systems so that windows may be kept closed. This requirement is typically satisfied through the installation of forced air ventilation systems with ductwork sized for the future installation of central air conditioning by the occupant. These units are indicated in Figure 3. The installation of central air conditioning systems will satisfy and exceed ventilation requirements. The location, installation and sound ratings of the outdoor air conditioning devices should minimize noise impacts and comply with criteria of MECP publication NPC-300.

5.4 Building Façade Constructions

The predicted sound levels at all buildings, except for the 3-storey podium of Phase II/III buildings, will exceed 55 dBA during nighttime due to rail traffic noise. MECP guidelines stipulate that in such cases, building components including windows, walls, and doors be designed so that the indoor sound levels comply with the noise criteria in Table I.

Calculations were performed to determine the acoustical insulation factors (AIF) to maintain indoor sound levels within MECP guidelines. The calculation methods were developed by the National Research Council (NRC). They are based on the predicted future sound levels at the building facades, and the anticipated area ratios of the facade components (walls, windows and doors) and the floor area of the adjacent room.

Acoustical Requirements for Glazing

The required building components are selected based on the AIF value for road and rail traffic. A summary of the STC requirements is given in Table VI for the building façades, based on the possibility of sound entering the building through walls, windows and doors for all of the dwellings. Detailed floor plans and building elevations were not available for review at the time of this report. A window to floor ratio of 50% (40% fixed, 10% operable) for living/dining room and 40% (30%

fixed, 10% operable) for bedrooms were assumed to determine preliminary window STC ratings required to mitigate road and rail traffic noise levels.

Table VI: Preliminary Minimum STC Requirements

Prediction Location	Description	Space	STC Glazing Requirements
[A]	Phase I, 6-storey building	+Living/Dining	STC-30
		+Bedroom	STC-31
[B]	Phase II/III, 3-storey podium	+Living/Dining	OBC
		+Bedroom	
[C]	Phase II/III, 12-storey buildings	+Living/Dining	STC-32
		+Bedroom	STC-35
[D]	Phase IV A, 26-stroey building	+Living/Dining	STC-34
		+Bedroom	STC-35
[E]	Phase IV B, 18-storey building	+Living/Dining	STC-30
		+Bedroom	STC-33

Notes: OBC – Ontario Building Code
+ Sound entering through windows and walls

The glazing requirements can be met using fairly standard sealed units. Operable sections, including doors and operable windows, must be well-fitted and weather-stripped in order to achieve the upper range of target STC values. Acoustical criteria for different facades can be optimized as part of the detail design of the development, when floor plans and elevations for the buildings are available.

Sample window assemblies which may achieve the STC requirements are summarized in Table VII below. Note that acoustic performance varies with manufacture's construction details, and these are only guidelines to provide some indication of the type of glazing likely to be required; the STC requirements in Table VI are provided as a guideline based on the preliminary drawings. Acoustical test data for the selected assemblies should be requested from the supplier, to ensure that the stated acoustic performance levels will be achieved by their assemblies.

Table VII: Glazing Assemblies for STC Requirements

STC Requirement	Glazing Configuration (STC)
28 – 29	Any double-glazed unit
30 – 31	3(13)3
32 – 33	4(10)4
34	4(19)4
35 – 36	6(10)4, 5(16)4

In Table VII, the number outside parentheses indicate minimum pane thicknesses in millimeters and the number in parentheses indicates the minimum inter-pane gap in millimeters.

Further Analysis

When detailed floor plans and building elevations are available for the buildings, window glazing construction should be refined based on actual window to floor area ratios.

6 Stationary Source Assessment

Noise sources associated with industrial and commercial facilities, such as the nearby GO Transit station, auto repair shop, and fast food restaurant, are assessed separately from traffic sources under MECP guidelines. These facilities are considered to be Stationary Sources of Sound and criteria for their assessment are contained in the following section.

6.1 Criteria Governing Stationary (Industrial) Noise Sources

An industrial or commercial facility is classified in MECP guidelines as a stationary source of sound (as opposed to sources such as traffic or construction, for example) for noise assessment purposes. The proposed development is located in an urban acoustical environment classified as Class I according to MECP guidelines, which can be characterized by the background sound level being dominated by traffic and human activity.

The façade of a residence, or any associated usable outdoor area, is considered a sensitive point of reception. NPC-300 stipulates that the exclusionary minimum sound level limit for a stationary noise source in an urban Class 1 area is 50 dBA during daytime (07:00 to 19:00) and evening (19:00 to 23:00) hours, and 45 dBA during nighttime hours (23:00 to 07:00). If the background sound levels

due to road traffic exceed the exclusionary minimum limits, then the background sound level becomes the criterion. The background sound level is defined as the sound level that is present when the stationary source under consideration is not operating, and may include traffic noise and natural sounds. To ensure a conservative analysis, the exclusionary minimum criteria at all receptors will be adopted.

Commercial activities such as the occasional movement of customer vehicles, occasional deliveries, and garbage collection are not of themselves considered to be significant noise sources in the MECP guidelines. Accordingly, these sources have not been considered in this study. Noise from safety equipment (e.g. back-up beepers) are also exempt from consideration. Frequent truck movements at a warehouse or busy shipping/receiving docks at an industry must generally be assessed. Bus activities from the GO Transit Barrie South station has been included in this assessment.

The MECP guidelines stipulate that the sound level impact during a “predicable worst case hour” be considered. This is defined to be an hour when a typically busy “planned and predictable mode of operation” occurs at the subject facility, coincident with a period of minimal background sound. Compliance with MECP criteria generally results in acceptable levels of sound at residential receptors although there may still be residual audibility during periods of low background sound.

6.2 Stationary Source Noise Predictions

Predictive noise modelling was used to assess the sound impact of the nearby existing stationary sources at the most critically impacted façades of the proposed development, and the sound impact of the proposed loading activities on the nearby residences, in accordance with MECP guidelines. The noise prediction model was constructed based on a review of the proposed site and floor plans, satellite aerial photos, and estimates of sound emission levels of stationary sources taken from similar past HGC Engineering project files. Information regarding the loading bay activities of the proposed LTC are included in Appendix E.

Table VIII: Source Sound Power Levels [dB re 10-12 W]

Source	Octave Band Centre Frequency [Hz]								Overall [dBA]
	63	125	250	500	1k	2k	4k	8k	
Off-site Sources (from Nearby Commercial Facilities and GO Bus Station)									
GO Transit Bus Accelerating (Each)	116	106	102	100	100	99	96	91	106
GO Transit Bus Idling	107	100	94	91	93	93	88	78	98
5-Ton HVAC Unit	--	67	72	77	76	73	68	61	80
Kitchen Exhaust Fan	84	85	84	80	76	73	64	57	82
Drive-through Speakerboard*	80	75	72	86	83	81	68	53	88
Low Speed or Idling Car (Each)	90	86	76	72	71	68	62	58	77
On-site Sources (from Proposed Loading Area southwest of Phase 1/II)									
Medium Truck Accelerating (Each)	108	90	92	90	94	91	84	77	97
Medium Truck with Reefer Idling	91	87	89	84	91	88	79	71	94

Note: The above drive-through speakerboard sound power specification equates to a sound pressure level of 71 dBA at 1.5 meters from the speaker, while the speaker is active.
* Includes a 5 dB tonal penalty.

The above data were inputted into a predictive computer model. The software used for this purpose (*Cadna-A version 2024, build: 205.5427*) is a computer implementation of ISO Standard 9613-2.2 "Acoustics - Attenuation of Sound During Propagation Outdoors." The ISO method accounts for reduction in sound level with distance due to geometrical spreading, air absorption, ground attenuation and acoustical shielding by intervening structures such as buildings and barriers.

The following information and assumptions were used in the analysis.

- GO transit buses arrive and depart at the GO Station and will briefly idle at the bus platform.
- The auto shop will have 3 overhead bay doors open during vehicle repairs.
- Cars queue up at the drive-through at the Tim Hortons restaurant.
- Nighttime drive-through activities were assumed to be as busy as daytime due to early-morning rush hour activities, which typically occur between 6 to 7 am.
- A 5-Ton Lennox HVAC unit and a kitchen exhaust fan were assumed on the roof of the Tim Hortons at 1.2 m and 0.5 m above the roof, respectively.
- Based on information from the owners of the LTC facility, medium trucks with refrigeration units (reefer) can visit the loading area and idle during unloading.
- Location of the idling GO buses, idling passenger vehicles, drive-through speakerboard, rooftop mechanical equipment, and idling reefer truck sources are shown as green crosses, and accelerating GO buses and medium trucks are shown as green lines in Figures 4a/b.

In this impact assessment, we have considered typical worst-case (busiest hour) scenarios for each time period to be as follows:

Assumed day worst-case scenario:

- 10 buses arrive and depart at the GO Station.
- 5 buses idling briefly for 5 minutes at the bus platform.
- All auto repair bay doors open for 20 minutes out of an hour.
- Rooftop mechanical equipment operating at 100% capacity.
- 10 cars queuing in the drive-through lane for the full hour.
- Restaurant drive-through speakerboards active for 20 minutes out of an hour (10 seconds per order for 120 cars in an hour).
- 1 medium reefer truck visiting the LTC loading area in an hour and idling for 45 minute.

Assumed night worst-case scenario:

- 5 buses arrive and depart at the GO Station.
- 5 buses idling briefly for 5 minutes at the bus platform.
- All auto repair bay doors closed (outside of business hours)
- Rooftop mechanical equipment operating at 50 % capacity to account for cooler nighttime temperatures.
- 10 cars queuing in the drive-through lane for the full hour
- Restaurant drive-through speakerboards active for 20 minutes out of an hour (10 seconds per order for 120 cars in an hour).
- No activities at the proposed LTC loading area.

6.3 Results

The unmitigated sound levels due to stationary noise sources associated with the existing stationary sources at the façades of the proposed building, and the sources associated with the proposed loading area at the existing residences, are summarized in Table IX, and presented graphically in Figures 5 and 6.

Table IX: Predicted Sound Levels from the Stationary Sources [dBA]

	Daytime (07:00 – 23:00)	Nighttime (23:00 – 07:00)	Criteria (Daytime / Nighttime)
Impact of Off-site Sources on Proposed Development			
Phase IV A	48	45	50 / 45
Phase IV B	43	40	
Phase III	45	43	
Phase II	42	40	
Phase I	40	37	
Impact of On-site Sources on Existing Residences			
Residences on Goodwin Dr	50	--	50 / 45

The results of the analysis indicate that the predicted sound levels due to the operation of the nearby existing stationary noise sources on the proposed development, and the sound levels due to the loading activities of the proposed development on the nearby residences, are within MECP limits at the façades of the proposed buildings during a worst-case operational scenario. Mitigation is not required.

7 Warning Clauses

The MECP guidelines recommend that warning clauses be included in the property and tenancy agreements and offers of purchase and sale for all units with anticipated traffic sound level excesses. The following noise warning clauses are required for specific dwellings as indicated in Table X.

Suggested wording for future dwellings which have sound levels in excess of MECP criteria but do not require mitigation measures is given below.

A):

Purchasers/tenants are advised that sound levels due to increasing road and rail 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, Conservation and Parks.

Suggested wording for future dwellings with sound level excesses and will require central air conditioning is given below.

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 and rail traffic may occasionally interfere with some activities of the dwelling occupants as the sound levels exceed the Municipality's and the Ministry of the Environment, Conservation and Parks noise criteria.

Suggested wording for future dwellings which have provisions for central air conditioning to be installed is given below.

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.

Suggest wording for future dwellings which will have central air conditioning units to be installed is given below.

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.

Suggested wording for future dwelling units in close proximity to existing commercial facilities and GO Transit station is given below.

E):

Purchasers are advised that due to the proximity of the existing commercial buildings and GO Station, sound levels from the facilities may be at times be audible.

GO Transit's standard warning clause for residential developments located within 300 m of a railway right-of-way (principal main line) is given below.

F):

The Applicant is advised that the subject land is located within Metrolinx's 300 metres railway corridor zone of influence and as such is advised that Metrolinx and its assigns and successors in interest has or have a right-of-way within 300 metres from the subject land. The Applicant is further advised that there may be alterations to or expansions of the rail or other transit facilities on such right-of-way in the future including the possibility that Metrolinx or any railway entering into an agreement with Metrolinx to use the right-of-way or their assigns or successors as aforesaid may expand or alter their operations, which expansion or alteration may affect the

environment of the occupants in the vicinity, notwithstanding the inclusion of any noise and vibration attenuating measures in the design of the development and individual lots, blocks or units.

8 Impact of the Development on Itself

Section 5.8.1.1 of the Ontario Building Code (OBC), released on January 1, 2020, specifies the minimum required sound insulation characteristics for demising partitions, in terms of Sound Transmission Class (STC) or Apparent Sound Transmission Class (ASTC) values. In order to maintain adequate acoustical privacy between separate suites in a multi-tenant building, inter-suite walls must meet or exceed STC-50 or ASTC-47. Suite separation from a refuse chute or elevator shaft must meet or exceed STC-55. In addition, it is recommended that the floor/ceiling constructions separating suites from any amenity or commercial spaces also meet or exceed STC-55. Tables 1 and 2 in Section SB-3 of the Supplementary Guideline to the OBC provide a comprehensive list of constructions that will meet the above requirements.

Tarion's Builder Bulletin B19R requires the internal design of condominium projects to integrate suitable acoustic features to insulate the suites from noise from each other and amenities in accordance with the OBC, and limit the potential intrusions of mechanical and electrical services of the buildings on its residents. If B19R certification is needed, an acoustical consultant is required to review the mechanical and electrical drawings and details of demising constructions and mechanical/electrical equipment, when available, to help ensure that the noise impact of the development on itself is maintained within acceptable levels.

When detailed elevation drawings and floor plans are available, the impact of the LTC loading area activities on the proposed development itself should be further assessed.

9 Impact of the Development on the Environment

It is expected that any increase in local traffic associated with the development will not be substantial enough to affect noise levels significantly.

Sound levels from stationary (non-traffic) sources of noise such as rooftop air-conditioners, cooling towers, exhaust fans, etc. should not exceed the minimum one-hour L_{EQ} ambient (background) sound level from road traffic, at any potentially impacted residential point of reception, to avoid noise

complaints. Based on the levels observed during our site visit, the typical minimum ambient sound levels in the area are expected to be up to 50 dBA or more during the day and 45 dBA or more at night. Thus any electro-mechanical equipment associated with this development (e.g. emergency generator testing, fresh-air handling equipment, etc.) should be designed with these targets in mind such that they do not result in noise impact beyond these ranges.

10 Summary and Recommendations

The following list and Table X summarize the recommendations made in this report. The reader is referred to Figure 3 and previous sections of the report where these recommendations are applied and discussed in more detail.

1. Central air conditioning will be required for the 6-storey Phase I building, the two 12-storey Phase II/III buildings, and the 26-storey Phase IV A building.

2. Forced air ventilation systems with ductwork sized for future installation of central air conditioning systems will be required for the podiums of the Phase II/IIII buildings and the 18-storey Phase IV B building

3. Upgraded building constructions are required for all building façades, with exception of the 3-Storey podium building of Phase II/III, as noted in Section 5.4. When detailed floor plans and building elevations are available for the dwelling units with exposure to the roadways, window glazing construction should be refined on actual window to floor ratios.

4. The use of warning clauses in the property and tenancy agreements is recommended to inform future residents of traffic noise issues, to address sound level excesses, and proximity to existing commercial facilities and GO Station.

5. When detailed elevation drawings and floor plans are available, the impact of the LTC loading area activities on the proposed development itself should be further assessed.

Table X: Summary of Noise Control Requirements and Noise Warning Clauses

Description	Acoustic Barrier	Ventilation Requirements*	Type of Warning Clause	Upgraded Glazing Constructions
Phase I 6-Storey Building	--	Central A/C	B, D, E, F	LR/DR: STC-30 BR: STC-31
Phase II/III 3-Storey Podiums	--	Forced Air	A, C, E, F	OBC
Phase II/III 12-Storey Buildings	--	Central A/C	B, D, E, F	LR/DR: STC-32 BR: STC-35
Phase IV A 26-Storey Building	--	Central A/C	B, D, E, F	LR/DR: STC-34 BR: STC-35
Phase IV B 18-Storey Building	--	Forced Air	A, C, E, F	LR/DR: STC-30 BR: STC-33
Parkette, Courtyard	--	--	--	--

Notes:
* The location, installation and sound rating of the air conditioning condensers must be compliant with MECP Guideline NPC-300, as applicable.
-- No specific requirements
OBC – Ontario Building Code
LR/DR – Living Room/Dining Room
BR – Bedroom

10.1 Implementation

To ensure that the noise control recommendations outlined above are properly implemented, it is recommended that:

1. Prior to the issuance of building permits for this development, a Professional Engineer qualified to perform acoustical engineering services in the Province of Ontario should review the detailed architectural plans and building elevations to refine glazing requirements based on actual window to floor areas ratios.

2. Prior to the issuance of occupancy permits for this development, the Municipality's building inspector or a Professional Engineer qualified to perform acoustical engineering services in the Province of Ontario should certify that the noise control measures have been properly incorporated, installed, and constructed.

Figure 1: Key Plan

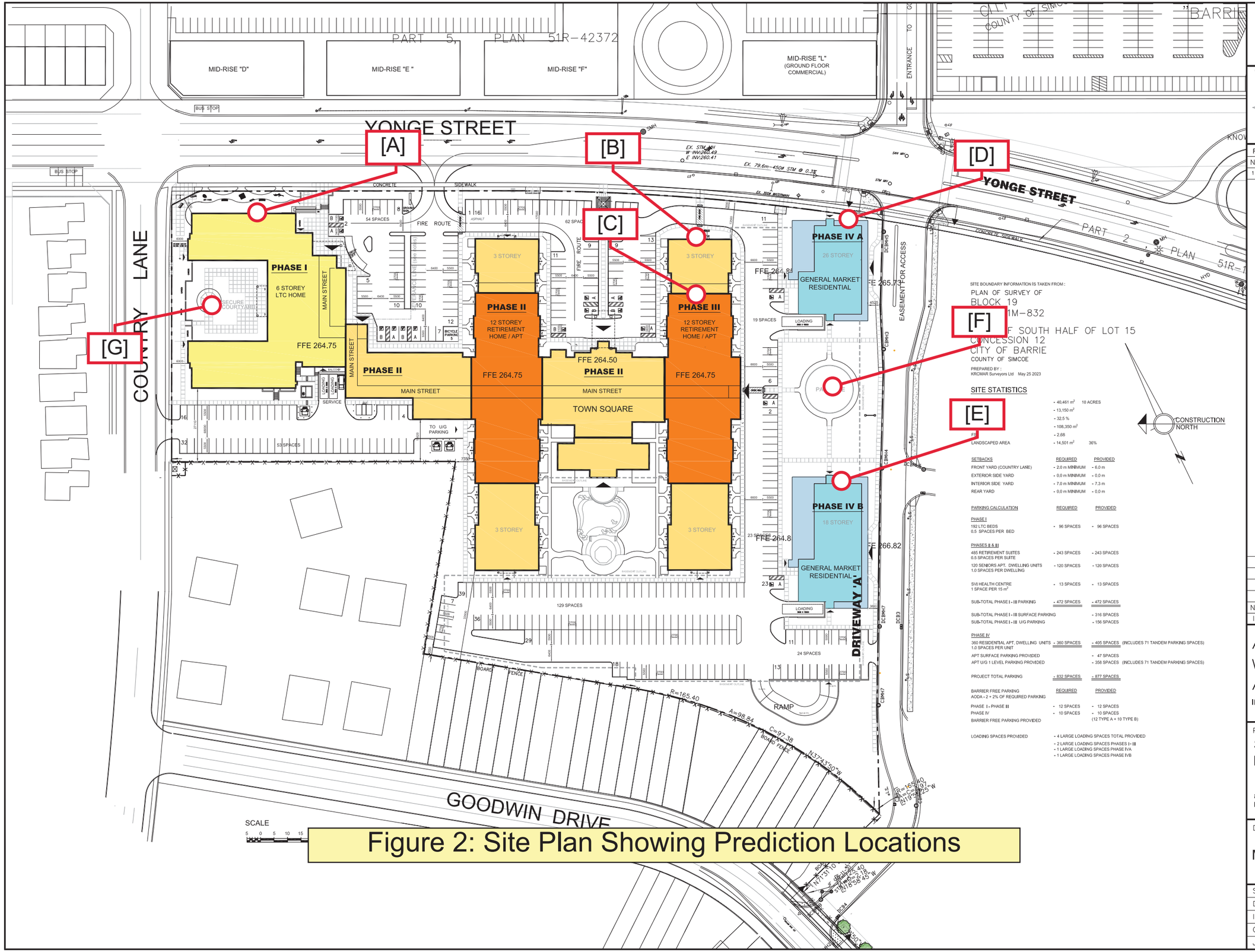

Figure 2: Site Plan Showing Prediction Locations

SITE BOUNDARY INFORMATION IS TAKEN FROM :
PLAN OF SURVEY OF
BLOCK 19
1M-832
F SOUTH HALF OF LOT 15
CONCESSION 12
CITY OF BARRIE
COUNTY OF SIMCOE
PREPARED BY :
KRCMAR Surveyors Ltd May 25 2023

SITE STATISTICS

	- 40,461 m²	10 ACRES
	- 13,150 m²	
	- 32.5 %	
	- 108,350 m²	
	- 2.68	
LANDSCAPED AREA	- 14,501 m²	36%

SETBACKS	REQUIRED	PROVIDED
FRONT YARD (COUNTRY LANE)	- 2.0 m MINIMUM	- 6.0 m
EXTERIOR SIDE YARD	- 0.0 m MINIMUM	- 0.0 m
INTERIOR SIDE YARD	- 7.0 m MINIMUM	- 7.3 m
REAR YARD	- 0.0 m MINIMUM	- 0.0 m

PARKING CALCULATION	REQUIRED	PROVIDED
PHASE I		
192 LTC BEDS 0.5 SPACES PER BED	- 96 SPACES	- 96 SPACES
PHASES II & III		
485 RETIREMENT SUITES 0.5 SPACES PER SUITE	- 243 SPACES	- 243 SPACES
120 SENIORS APT. DWELLING UNITS 1.0 SPACES PER DWELLING	- 120 SPACES	- 120 SPACES
SVI HEALTH CENTRE 1 SPACE PER 15 m²	- 13 SPACES	- 13 SPACES
SUB-TOTAL PHASE I - III PARKING	- 472 SPACES	- 472 SPACES
SUB-TOTAL PHASE I - III SURFACE PARKING		- 316 SPACES
SUB-TOTAL PHASE I - III U/G PARKING		- 156 SPACES
PHASE IV		
360 RESIDENTIAL APT. DWELLING UNITS 1.0 SPACES PER UNIT	- 360 SPACES	- 405 SPACES (INCLUDES 71 TANDEM PARKING SPACES)
APT SURFACE PARKING PROVIDED		- 47 SPACES
APT U/G 1 LEVEL PARKING PROVIDED		- 358 SPACES (INCLUDES 71 TANDEM PARKING SPACES)
PROJECT TOTAL PARKING	- 832 SPACES	- 877 SPACES

BARRIER FREE PARKING AODA - 2 + 2% OF REQUIRED PARKING	REQUIRED	PROVIDED
PHASE I - PHASE III	- 12 SPACES	- 12 SPACES
PHASE IV	- 10 SPACES	- 10 SPACES (12 TYPE A + 10 TYPE B)
BARRIER FREE PARKING PROVIDED		

LOADING SPACES PROVIDED
- 4 LARGE LOADING SPACES TOTAL PROVIDED
- 2 LARGE LOADING SPACES PHASES I - III
- 1 LARGE LOADING SPACES PHASE IVA
- 1 LARGE LOADING SPACES PHASE IVB

CONSTRUCTION NORTH

CONSTRUCTION NORTH

REVISIONS

No.	DATE	DESCRIPTION
1		

No.	Date	Description
Issued		

ANDERSON WELLSMAN ARCHITECTS INCORPORATED
1090 DON MILLS ROAD
SUITE 612
TORONTO, ONTARIO
M3C 3R6
TEL: 416.391.3699
FAX: 416.510.2629

Project:
SCHLEGEL VILLAGES BARRIE

800 YONGE STREET
BARRIE, ON

Drawing Title
MASTER SITE PLAN

Scale:	1:600
Date:	JUL 12 2022
Input by:	G.V.
Checked by:	R.A.
Job No.	2116

Sheet No.
SP 10.1

FILE NAME: VERSION 8.2

Figure 3: Site Plan Showing Ventilation Requirements

LEGEND

Central A/C required

Forced air ventilation with provisions for the future installation of central A/C by the occupant is required. Installation of Central A/C will satisfy and exceed requirements

SUB-TOTAL PHASE I - III U/G PARKING		- 156 SPACES
PHASE IV		
360 RESIDENTIAL APT. DWELLING UNITS 1.0 SPACES PER UNIT	- 360 SPACES	- 405 SPACES (INCLUDES 71 TANDEM PARKING SPACES)
APT SURFACE PARKING PROVIDED		- 47 SPACES
APT U/G 1 LEVEL PARKING PROVIDED		- 358 SPACES (INCLUDES 71 TANDEM PARKING SPACES)
PROJECT TOTAL PARKING	- 832 SPACES	- 877 SPACES
BARRIER FREE PARKING AODA - 2 + 2% OF REQUIRED PARKING	REQUIRED	PROVIDED
PHASE I - PHASE III	- 12 SPACES	- 12 SPACES
PHASE IV	- 10 SPACES	- 10 SPACES (12 TYPE A + 10 TYPE B)
BARRIER FREE PARKING PROVIDED		
LOADING SPACES PROVIDED		- 4 LARGE LOADING SPACES TOTAL PROVIDED - 2 LARGE LOADING SPACES PHASES I - III - 1 LARGE LOADING SPACES PHASE IVA - 1 LARGE LOADING SPACES PHASE IVB

CONSTRUCTION NORTH

REVISIONS

No.	DATE	DESCRIPTION
1		

scription

Issued

ANDERSON WELLSMAN ARCHITECTS INCORPORATED

1090 DON MILLS ROAD
SUITE 612
TORONTO, ONTARIO
M3C 3R6
TEL: 416.391.3699
FAX: 416.510.2629

Project:
SCHLEGEL VILLAGES BARRIE

800 YONGE STREET
BARRIE, ON

Drawing Title
MASTER SITE PLAN

Scale:	1:600
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Job No.	2116

Sheet No.
SP 10.1

FILE NAME: VERSION 8.2

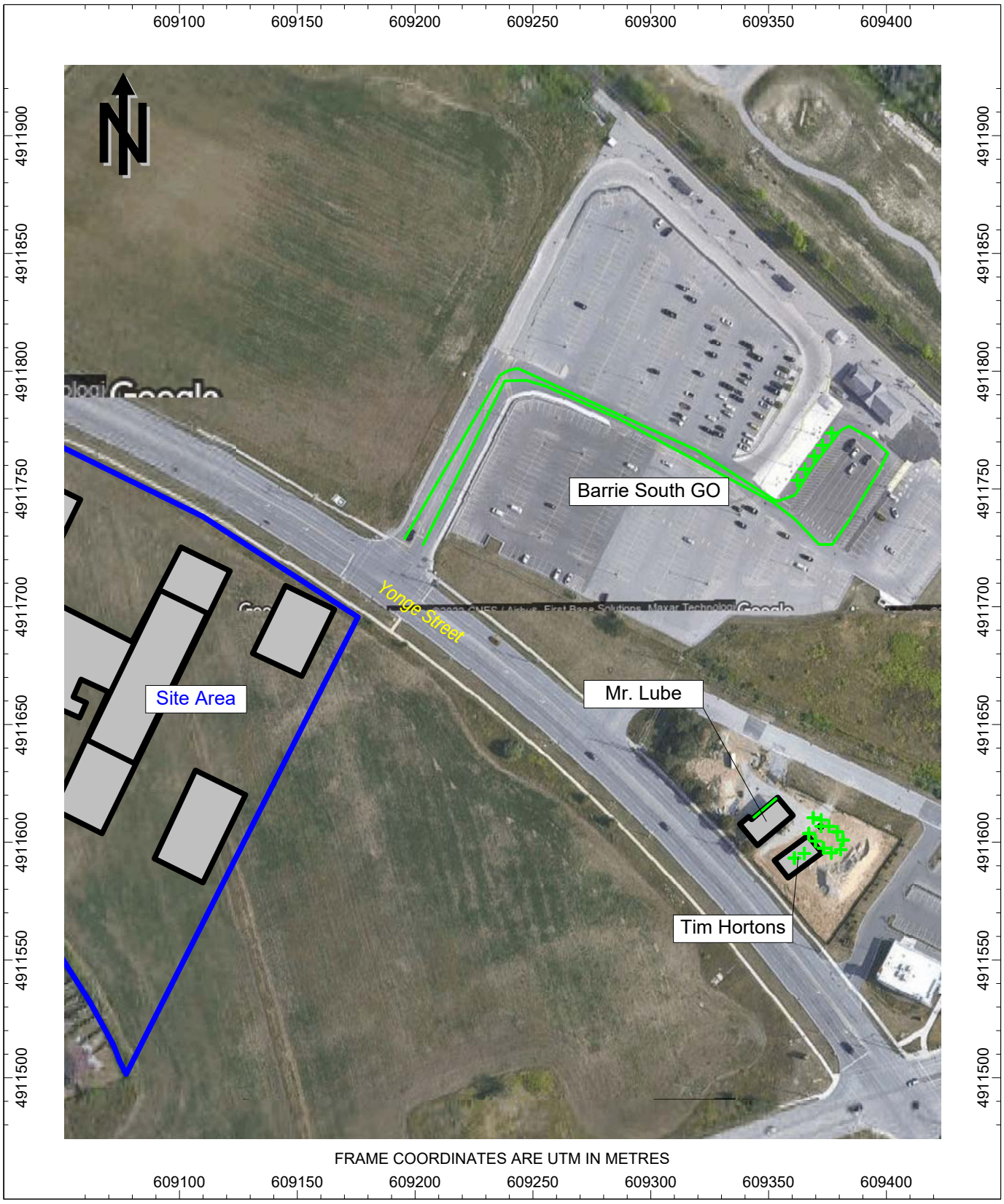

Figure 4a: Stationary Noise Source Locations

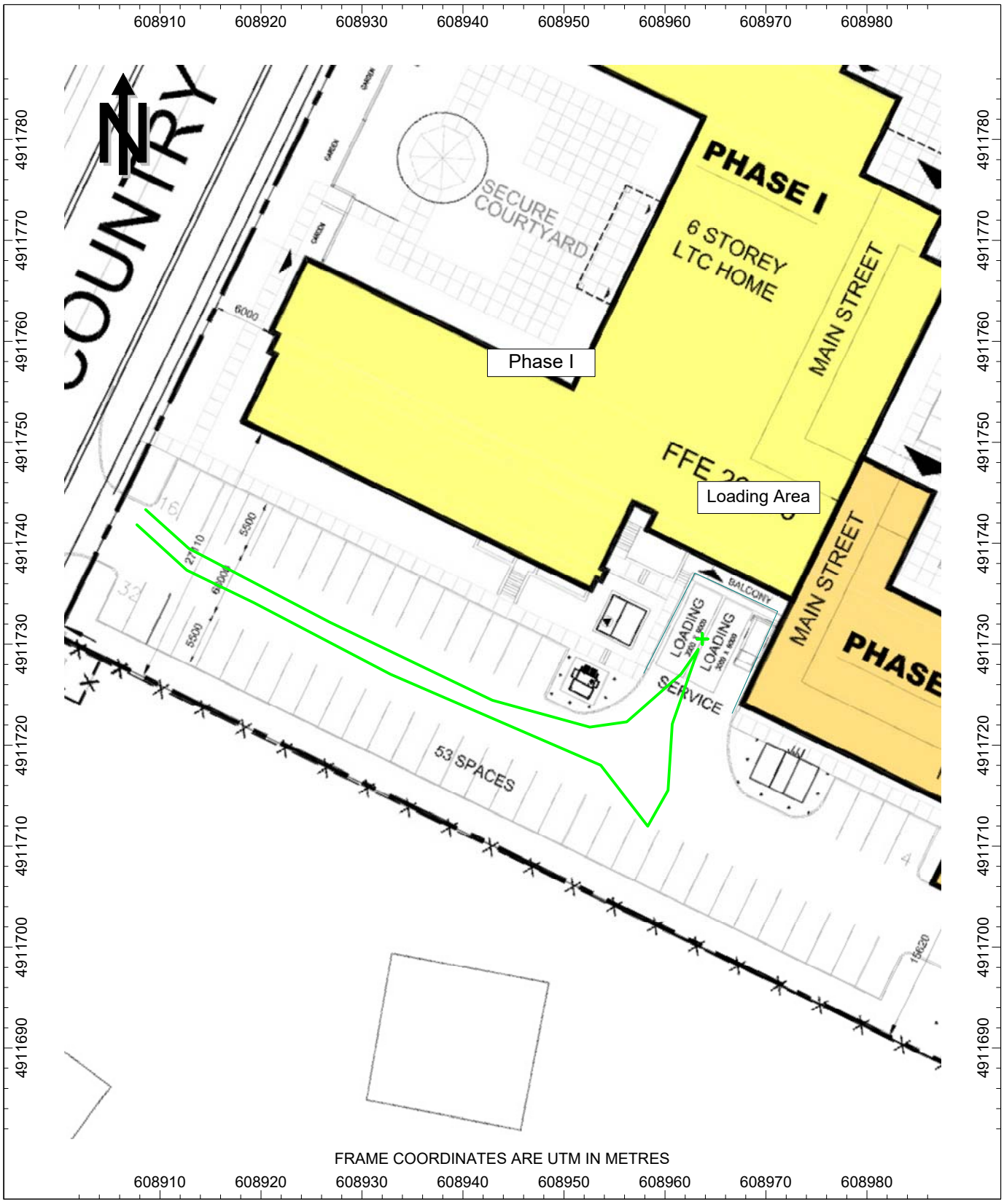

Figure 4b: Stationary Noise Source Locations, On-site Loading Bay

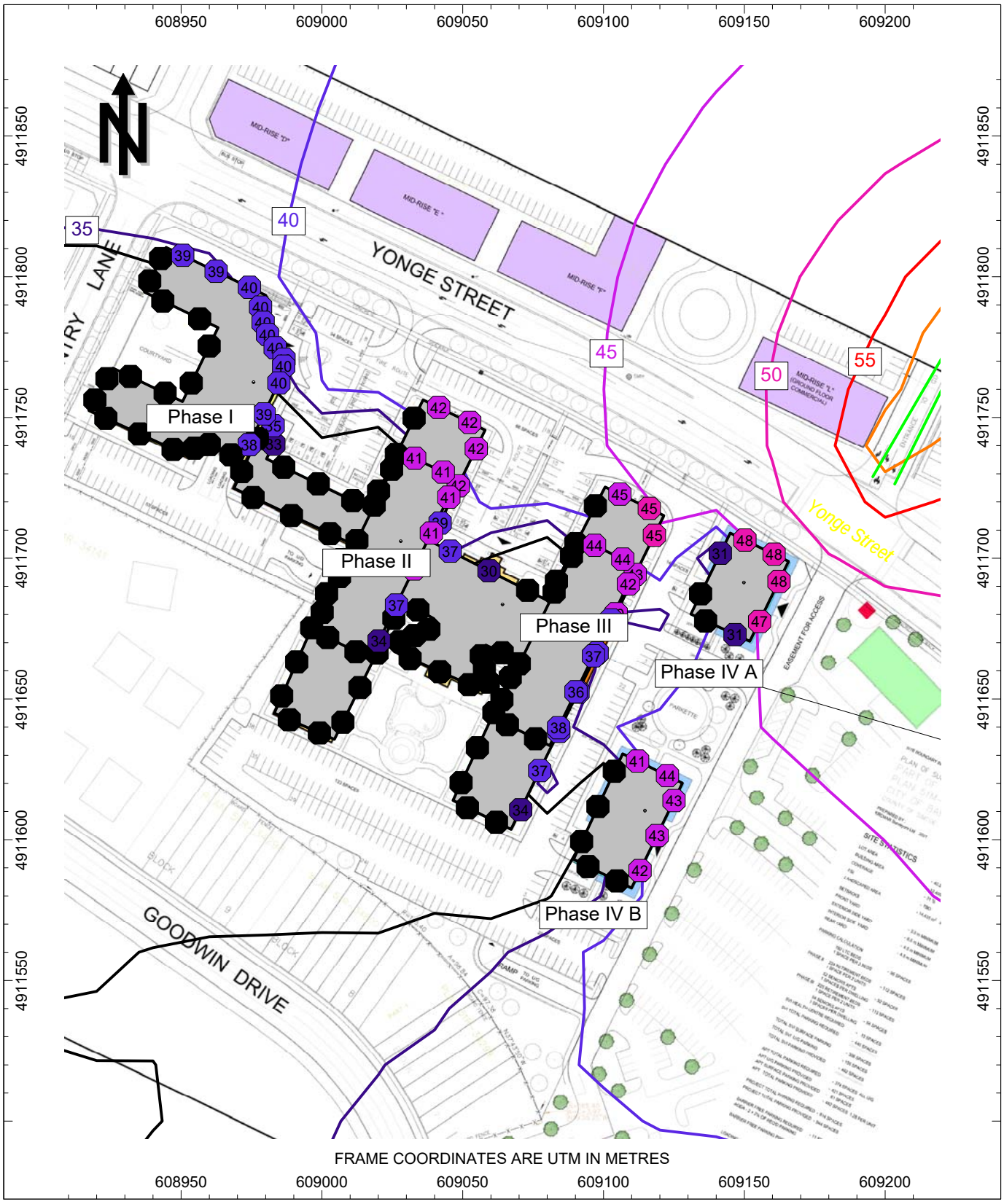

Figure 5a: Stationary Noise Impact of Off-site Sources, Sound Level Contours
Daytime (07:00 - 23:00), Leq [dBA]

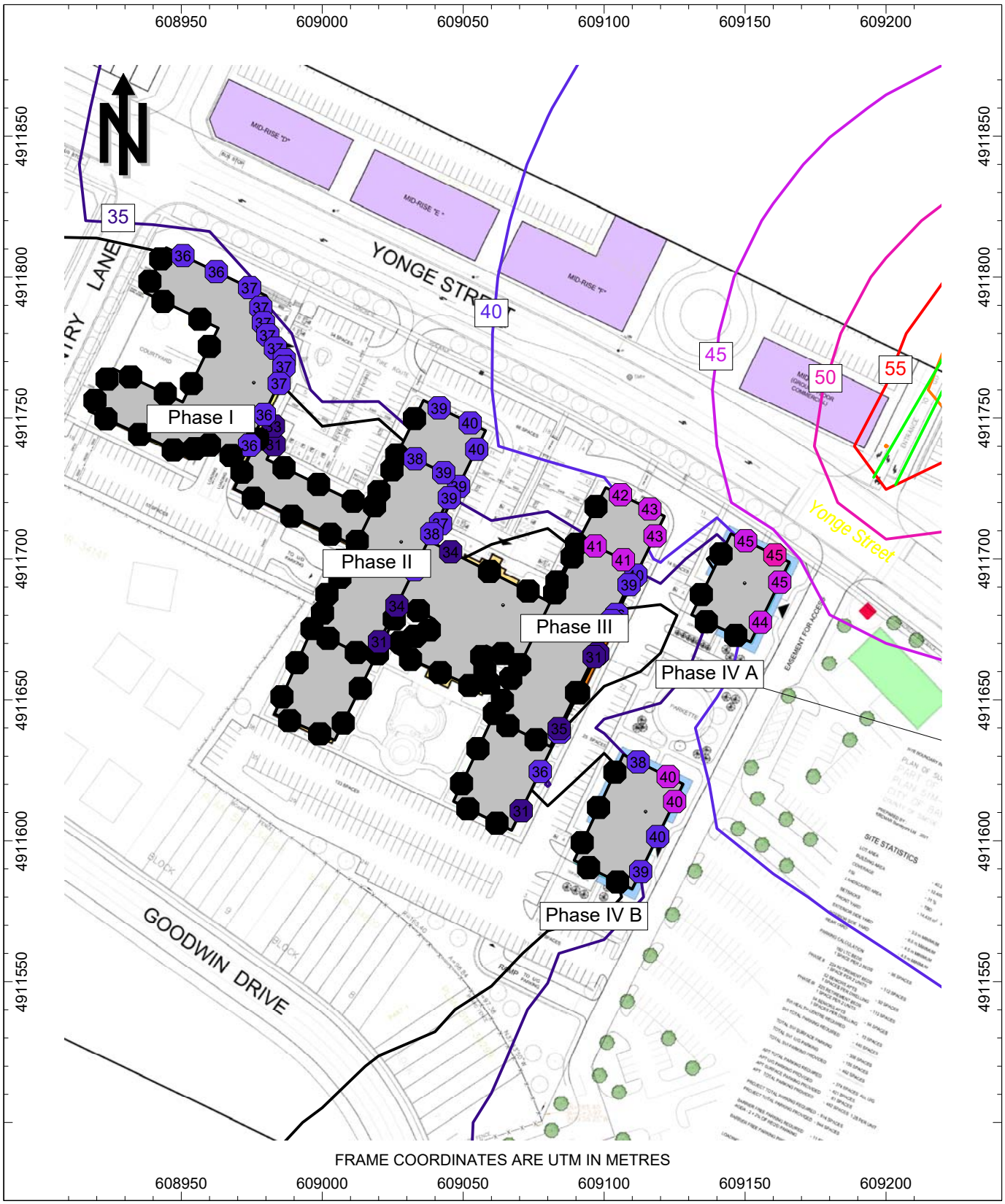

Figure 5b: Stationary Noise Impact of Off-site Sources, Sound Level Contours
Nighttime (23:00 - 07:00), Leq [dBA]

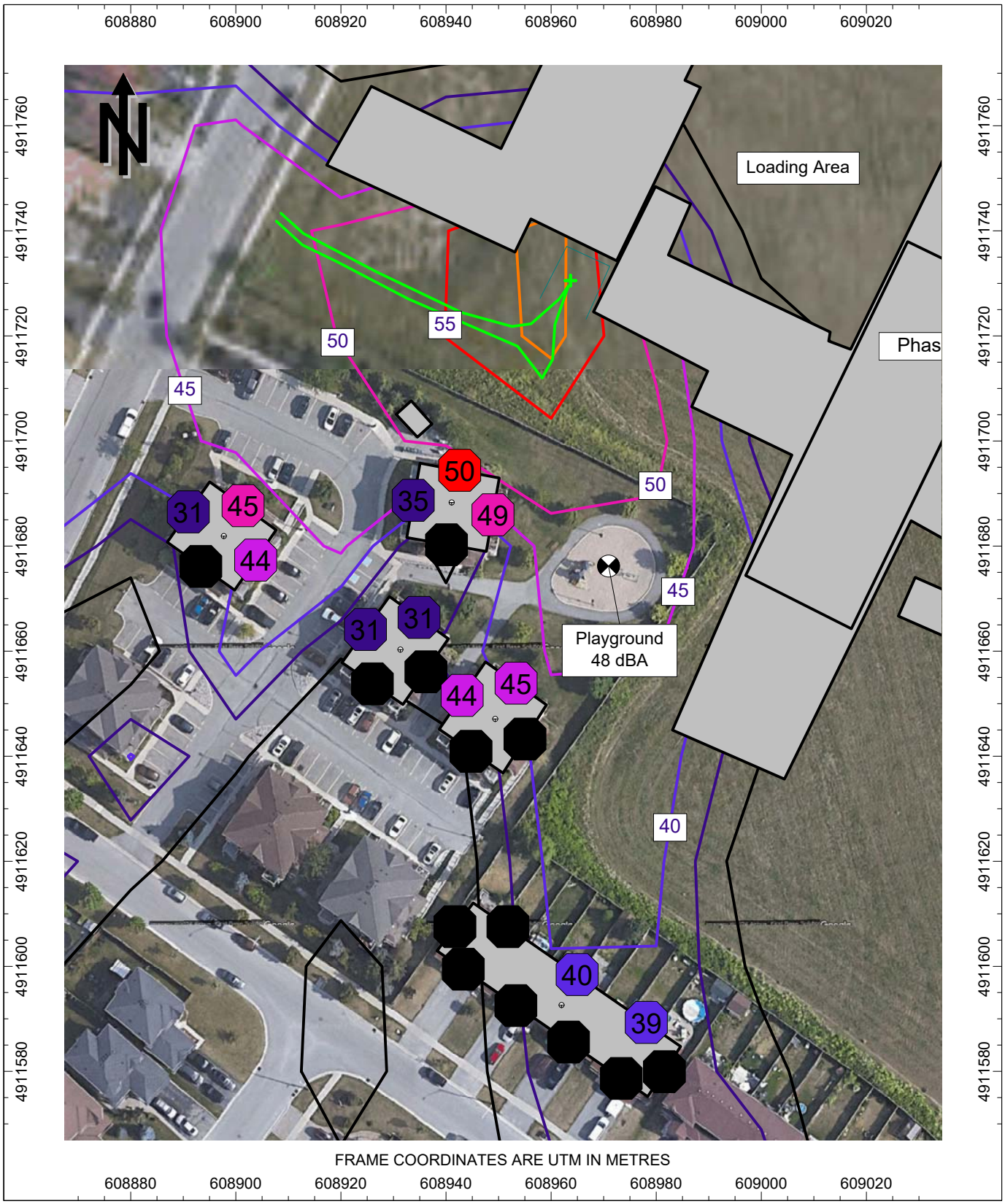

Figure 6: Stationary Noise Impact of On-site Loading Bay Sources, Sound Level Contours Daytime (07:00 - 23:00), Leq [dBA]

Appendix A

Metrolinx Requirements

PRINCIPAL MAIN LINE REQUIREMENTS FOR NEW DEVELOPMENT

A. Safety setback of dwellings from the railway rights-of-way to be a minimum of 30 metres in conjunction with a safety berm. The safety berm shall be adjoining and parallel to the railway rights-of-way with returns at the ends, 2.5 metres above grade at the property line, with side slopes not steeper than 2.5 to 1.

B. Noise attenuation barrier shall be adjoining and parallel to the railway rights-of-way, having returns at the ends, and a minimum total height of 5.5 metres above top-of-rail. Acoustic fence to be constructed without openings and of a durable material weighing not less than 20 kg. per square metre of surface area. Subject to the review of the noise report, GO Transit may consider other measures recommended by an approved Noise Consultant.

C. Ground-borne vibration transmission to be evaluated in a report through site testing to determine if dwellings within 75 metres of the railway rights-of-way will be impacted by vibration conditions in excess of 0.14 mm/sec RMS between 4 Hz and 200 Hz. The monitoring system should be capable of measuring frequencies between 4 Hz and 200 Hz, $\pm$ 3 dB with an RMS averaging time constant of 1 second. If in excess, isolation measures will be required to ensure living areas do not exceed 0.14 mm/sec RMS on and above the first floor of the dwelling.

D. The Owner shall install and maintain a chain link fence of minimum 1.83 metre height along the mutual property line.

E. The following clause should be inserted in all development agreements, offers to purchase, and agreements of Purchase and Sale or Lease of each dwelling unit within 300m of the railway right-of-way.

> **Warning:** Metrolinx, carrying on business as GO Transit, and its assigns and successors in interest has or have a right-of-way within 300 metres from the land the subject hereof. There may be alterations to or expansions of the rail facilities on such right-of-way in the future including the possibility that GO Transit or any railway entering into an agreement with GO Transit to use the right-of-way or their assigns or successors as aforesaid may expand their operations, which expansion may affect the living environment of the residents in the vicinity, notwithstanding the inclusion of any noise and vibration attenuating measures in the design of the development and individual dwelling(s). Metrolinx will not be responsible for any complaints or claims arising from use of such facilities and/or operations on, over or under the aforesaid right-of-way.

F. Any proposed alterations to the existing drainage pattern affecting the railway right-of-way must receive prior concurrence from GO Transit and be substantiated by a drainage report to the satisfaction of GO Transit.

G. The Owner shall through restrictive covenants to be registered on title and all agreements of purchase and sale or lease provide notice to the public that the safety berm, fencing and vibration isolation measures implemented are not to be tampered with or altered and further that the Owner shall have sole responsibility for and shall maintain these measures to the satisfaction of GO Transit.

H. The Owner enter into an Agreement stipulating how GO Transit's concerns will be resolved and will pay GO Transit's reasonable costs in preparing and negotiating the agreement.

I. The Owner may be required to grant GO Transit an environmental easement for operational emissions, registered on title against the subject property in favour of GO.

Appendix B

Rail Traffic Information

Harry Cai

From: Rail Data Requests <RailDataRequests@metrolinx.com>
Sent: September 3, 2024 10:54 AM
To: Harry Cai
Cc: Sheeba Paul
Subject: RE: Rail Data Request - 800 Yonge St, Barrie - Noise Study

Hi Harry,

Apologies, there was a typo. I would like to confirm that there ARE *anti-whistling by-laws* in affect near the subject lands at Mapleview Drive E. at-grade crossing.

Let me know if you have any questions,

Best,

Jenna Auger (She/Her)
Third Party Projects Review (TPPR)
Development & Real Estate Management
T: (416)-881-0579
10 Bay Street | Toronto | Ontario | M5J 2N8

METROLINX

From: Rail Data Requests
Sent: Tuesday, September 3, 2024 10:04 AM
To: Harry Cai <hcai@hgcengineering.com>
Cc: Sheeba Paul <spaul@hgcengineering.com>
Subject: RE: Rail Data Request - 800 Yonge St, Barrie - Noise Study

Hi Harry,

Further to your request dated August 29, 2024, the subject lands (800 Yonge Street, Barrie) are located within 300 metres of the Metrolinx Newmarket Subdivision (which carries Barrie GO rail service). There have been updates to this data.

It's anticipated that GO rail service on this Subdivision will be comprised of electric trains only. The GO rail fleet combination on this Subdivision will consist of up to 1 locomotive and 5 passenger cars. The typical GO rail weekday train volume forecast near the subject lands, including both revenue and equipment trips is in the order of 120 trains. The planned detailed trip breakdown is listed below:

	1 Electric Locomotive		1 Electric Locomotive
Day (0700-2300)	94	Night (2300-0700)	26

The current track design speed near the subject lands is 50 mph (80 km/h).

There are no *anti-whistling by-laws* in affect near the subject lands at Mapleview Drive E. at-grade crossing.

With respect to future electrified rail service, Metrolinx is committed to finding the most sustainable solution for electrifying the GO rail network and we are currently working towards the next phase.

Options have been studied as part of the Transit Project Assessment Process (TPAP) for the GO Expansion program, currently in the Development Phase. ONxpress will be responsible for selecting and delivering the right trains and infrastructure to unlock the benefits of GO Expansion. Construction to support GO Expansion is currently underway.

However, we can advise that train noise is dominated by the powertrain at lower speeds and by the wheel- track interaction at higher speeds. Hence, the noise level and spectrum of electric trains is expected to be very similar at higher speeds, if not identical, to those of equivalent diesel trains.

Given the above considerations, it would be prudent at this time, for the purposes of acoustical analyses for development in proximity to Metrolinx corridors, to assume that the acoustical characteristics of electrified and diesel trains are equivalent. In light of the aforementioned information, acoustical models should employ diesel train parameters as the basis for analyses. We anticipate that additional information regarding specific operational parameters for electrified trains will become available in the future once the proponent team is selected.

Operational information is subject to change and may be influenced by, among other factors, service planning priorities, operational considerations, funding availability and passenger demand.

It should be noted that this information only pertains to Metrolinx rail service. It would be prudent to contact other rail operators in the area directly for rail traffic information pertaining to non-Metrolinx rail service.

I trust this information is useful. Should you have any questions or concerns, please do not hesitate to contact me.

Best,

Jenna Auger (She/Her)
Third Party Projects Review (TPPR)
Development & Real Estate Management
T: (416)-881-0579
10 Bay Street | Toronto | Ontario | M5J 2N8

METROLINX

From: Harry Cai <hcai@hgcengineering.com>
Sent: Thursday, August 29, 2024 6:26 PM
To: Rail Data Requests <RailDataRequests@metrolinx.com>
Cc: Sheeba Paul <spaul@hgcengineering.com>
Subject: RE: Rail Data Request - 800 Yonge St, Barrie - Noise Study

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Hi,

HGC is updating a noise study, located near 800 Yong Street in Barrie. See below for the original request and data obtained in 2022. See here for a google maps link for reference. Metrolinx has requested that we update our noise study with updated rail volume data.

Could you provide updated rail volume data for this segment?

Your expedited assistance would be greatly appreciated – we're under a tight deadline to respond to Metrolinx's comments.

Thank you.

Harry Ao Cai, PEng
HGC Engineering **NOISE | VIBRATION | ACOUSTICS**
Howe Gastmeier Chapnik Limited
t: 905.826.4044 x297

Any conclusions or recommendations provided by HGC Engineering in this e-mail or any attachments have limitations.

From: Rail Data Requests <RailDataRequests@metrolinx.com>
Sent: Wednesday, July 20, 2022 9:03 AM
To: Harry Cai <hcai@hgcengineering.com>
Subject: RE: Rail Data Request - 800 Yonge St, Barrie - Noise Study

Good morning Harry,

Further to your request dated July 13th, 2022, the subject lands (800 Yonge St, Barrie) are located within 300 metres of the Metrolinx Newmarket Subdivision (which carries Barrie GO rail service).

It's anticipated that GO rail service on this Subdivision will be comprised of electric trains. The GO rail fleet combination on this Subdivision will consist of up to 2 locomotives and 12 passenger cars. The typical GO rail weekday train volume forecast near the subject lands, including both revenue and equipment trips is in the order of 82 trains. The planned detailed trip breakdown is listed below:

	1 Electric Locomotive	2 Electric Locomotives		1 Electric Locomotive	2 Electric Locomotives
Day (0700-2300)	60	8	Night (2300-0700)	12	2

The current track design speed near the subject lands is 50 mph (80 km/h).

There are *anti-whistling by-laws* in affect at Mapleview Drive E. at-grade crossing.

In addition to the data provided above, I would request that the following info is provided to the developer as well:

With respect to future electrified rail service, Metrolinx is committed to finding the most sustainable solution for electrifying the GO rail network and we are currently working towards the next phase.

Options have been studied as part of the Transit Project Assessment Process (TPAP) for the GO Expansion program, currently in the procurement phase. The successful proponent team will be responsible for selecting and delivering the right trains and infrastructure to unlock the benefits of GO Expansion. The contract is in a multi-year procurement process and teams have submitted their bids to Infrastructure Ontario and Metrolinx for evaluation and contract award. GO Expansion construction will get underway in late 2022 or 2023.

However, we can advise that train noise is dominated by the powertrain at lower speeds and by the wheel- track interaction at higher speeds. Hence, the noise level and spectrum of electric trains is expected to be very similar at higher speeds, if not identical, to those of equivalent diesel trains.

Given the above considerations, it would be prudent at this time, for the purposes of acoustical analyses for development in proximity to Metrolinx corridors, to assume that the acoustical characteristics of electrified and diesel trains are equivalent. In light of the aforementioned information, acoustical models should employ diesel train parameters as the basis for analyses. We anticipate that additional information regarding specific operational parameters for electrified trains will become available in the future once the proponent team is selected.

Operational information is subject to change and may be influenced by, among other factors, service planning priorities, operational considerations, funding availability and passenger demand.

It should be noted that this information only pertains to Metrolinx rail service. It would be prudent to contact other rail operators in the area directly for rail traffic information pertaining to non-Metrolinx rail service.

I trust this information is useful. Should you have any questions or concerns, please do not hesitate to contact me.

Best Regards,

Farah Faroque
Intern, Third Party Projects Review
10 Bay Street | Toronto | Ontario | M5J 2N8
T: 437.900.2291

METROLINX

From: Harry Cai <hcai@hgcengineering.com>
Sent: July 13, 2022 1:50 PM
To: Rail Data Requests <RailDataRequests@metrolinx.com>
Subject: Rail Data Request - 800 Yonge St, Barrie - Noise Study

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Hi,

HGC Engineering is conducing a noise feasibility study located near 800 Yonge St in Barrie, ON. The site is close to the Newmarket Subdivision I believe. See here for a google maps link for reference.

Could you provide rail data near that area for number of trains day/night, train speed, and number of locomotives and cars?

Thank you.

Harry Cai, EIT
Project Consultant

HGC Engineering **NOISE | VIBRATION | ACOUSTICS**
Howe Gastmeier Chapnik Limited
2000 Argentia Road, Plaza One, Suite 203, Mississauga, Ontario, Canada L5N 1P7
t: 905.826.4044 ext. 297 **e**: hcai@hgcengineering.com
Visit our website: www.hgcengineering.com Follow Us – LinkedIn | Twitter | YouTube

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Appendix C

Road Traffic Information

From:	Justin MacDonald
To:	Harry Cai
Subject:	RE: Road Traffic Data Confirmation - Mapleview Drive E & Yonge St
Date:	July 18, 2022 1:13:53 PM

The information provided in 2020 is still valid.

Thanks.

Justin MacDonald, C.E.T., PTP
Project Delivery – Transportation Planning, Development Services
The City of Barrie
Mobile 705-734-8020
Please consider the environment before printing this email.

From: Harry Cai <hcai@hgcengineering.com>
Sent: Wednesday, July 13, 2022 1:54 PM
To: Justin MacDonald <Justin.MacDonald@barrie.ca>
Subject: Road Traffic Data Confirmation - Mapleview Drive E & Yonge St

Hi Justin,

HGC Engineering is conducting a noise study for a development located near Mapleview Drive & Yonge St. See here for a google maps link for reference.

We have existing data for those two roads near that intersection from 2020 (see attached).

Could you confirm if the data is still valid, or if there is new data available?

Thank you.

Harry Cai, EIT
Project Consultant

HGC Engineering **NOISE | VIBRATION | ACOUSTICS**
Howe Gastmeier Chapnik Limited
2000 Argentia Road, Plaza One, Suite 203, Mississauga, Ontario, Canada L5N 1P7
t: 905.826.4044 ext. 297 **e**: hcai@hgcengineering.com
Visit our website: www.hgcengineering.com Follow Us – LinkedIn | Twitter | YouTube

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Sheeba Paul

From: Justin MacDonald <Justin.MacDonald@barrie.ca>
Sent: October-16-20 9:51 AM
To: Sheeba Paul
Subject: Re: Road Traffic Data Request - Mapleview Drive East & Yonge Street

Good morning Sheeba,

I have updated the numbers to reflect the 2019 Transportation Master Plan.

Yonge Street 12,5000 vehicles per day with 3% commercial and 2% heavy; with a growth of 4% per year compounded annually to a horizon year of 2031.

Mapleview Drive 10,000 vehicles per day with 4% commercial and 3; with a growth of 6% per year compounded annually to a horizon year of 2031.

Thanks,

Justin MacDonald

From: Sheeba Paul <spaul@hgcengineering.com>
Sent: Thursday, October 15, 2020 2:31 PM
To: Justin MacDonald <Justin.MacDonald@barrie.ca>
Subject: RE: Road Traffic Data Request - Mapleview Drive East & Yonge Street

Hello Justin,

We are updating the noise study for the proposed mid-rise development and require new traffic forecasts.

The site is located on the south side of Mapleview Drive East, on the east side of the railway in Barrie, Ontario. A google link is included in your reference:

https://www.google.com/maps/place/Mapleview+Dr+E+%26+Yonge+St,+Barrie,+ON/@44.3486415,-79.627924,15.75z/data=!4m5!3m4!1s0x882abb0d2eca50eb:0xbaf222aad43551fc!8m2!3d44.348442!4d-79.627305

We require road traffic data for Mapleview Drive East and Yonge Street (typically AADT counts) and commercial vehicle percentages.

Thank you.

Ms. Sheeba Paul, MEng, PEng
Senior Associate

HGC Engineering NOISE | VIBRATION | ACOUSTICS
Howe Gastmeier Chapnik Limited
2000 Argentia Road, Plaza One, Suite 203, Mississauga, Ontario, Canada L5N 1P7
t: 905.826.4044 e: spaul@hgcengineering.com
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From: Justin MacDonald <Justin.MacDonald@barrie.ca>
Sent: August-31-16 11:25 AM
To: Victor Garcia <vgarcia@hgcengineering.com>
Subject: RE: Road Traffic Data Request - Mapleview Drive East & Yonge Street

Good morning Victor,

Sorry for the delay I was collecting the required information.

Yonge Street 11,000 vehicles per day with 3% commercial and 2% heavy; with a growth of 4% per year compounded annually to a horizon year of 2031.

Mapleview Drive 6,000 vehicles per day with 4% commercial and 3; ; with a growth of 4% per year compounded annually to a horizon year of 2031.

Hopefully this helps, should you have any questions please let me know.

Thanks,

Justin MacDonald, C.E.T.
Transportation Technologist
(705) 739-4220 ext. 5178

From: Victor Garcia [mailto:vgarcia@hgcengineering.com]
Sent: Wednesday, August 31, 2016 8:55 AM
To: Justin MacDonald
Subject: FW: Road Traffic Data Request - Mapleview Drive East & Yonge Street

Can you please give me an update on the request below?

Thanks,

Victor Garcia, P.Eng
HGC Engineering **NOISE | VIBRATION | ACOUSTICS**
Howe Gastmeier Chapnik Limited
t: 905.826.4044

From: Victor Garcia
Sent: August-22-16 12:30 PM
To: 'justin.macdonald@barrie.ca' <justin.macdonald@barrie.ca>
Subject: Road Traffic Data Request - Mapleview Drive East & Yonge Street

Good afternoon,

We are conducting a noise feasibility study for a proposed residential development located on Mapleview Drive East, on the east side of the railway in Barrie, Ontario. A google link is included in your reference:

https://www.google.com/maps/place/Yonge+St+%26+Mapleview+Dr+E,+Barrie,+ON,+Canada/@44.3482655,-79.6256528,18z/data=!3m1!1e3!4m2!3m1!1s0x882abb0d2eca50eb:0xbaf222aad43551fc

We require road traffic data for Mapleview Drive East and Yonge Street (typically AADT counts) and commercial vehicle percentages. Is this data available?

Regards,

Victor Garcia, P.Eng
Project Engineer

HGC Engineering **NOISE | VIBRATION | ACOUSTICS**
Howe Gastmeier Chapnik Limited
2000 Argentia Road, Plaza One, Suite 203, Mississauga, Ontario, Canada L5N 1P7
t: 905.826.4044 **e**: vgarcia@hgcengineering.com
Visit our website – www.hgcengineering.com **Follow Us** – LinkedIn | Twitter | YouTube

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Appendix D

Sample STAMSON 5.04 Output

STAMSON 5.0 NORMAL REPORT Date: 05-09-2024 14:57:53
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: a.te Time Period: Day/Night 16/8 hours
Description: Pred. Loc. [A], Phase I, 6-story LTC bldg

Rail data, segment # 1: GO Transit (day/night)

Train ! Trains ! Speed !# loc !# Cars! Eng !Cont
Type ! !(km/h) !/Train!/Train! type !weld
---
1. ! 94.0/26.0 ! 80.0 ! 2.0 ! 12.0 !Diesel! No

Data for Segment # 1: GO Transit (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 : 290.00 / 290.00 m
Receiver height : 16.50 / 16.50 m
Topography : 1 (Flat/gentle slope; no barrier)
No Whistle
Reference angle : 0.00

Results segment # 1: GO Transit (day)

LOCOMOTIVE (0.00 + 60.32 + 0.00) = 60.32 dBA
Angle1 Angle2 Alpha RefLeq D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.14 75.29 -14.60 -0.37 0.00 0.00 0.00 60.32

WHEEL (0.00 + 52.35 + 0.00) = 52.35 dBA
Angle1 Angle2 Alpha RefLeq D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.24 68.93 -15.95 -0.63 0.00 0.00 0.00 52.35

Segment Leq : 60.96 dBA

Total Leq All Segments: 60.96 dBA

Results segment # 1: GO Transit (night)

LOCOMOTIVE (0.00 + 57.75 + 0.00) = 57.75 dBA
Angle1 Angle2 Alpha RefLeq D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---

```
  -90     90   0.14  72.72 -14.60  -0.37   0.00   0.00   0.00  57.75
-------------------------------------------------------------------------

WHEEL (0.00 + 49.78 + 0.00) = 49.78 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
  -90     90   0.24  66.36 -15.95  -0.63   0.00   0.00   0.00  49.78
-------------------------------------------------------------------------

Segment Leq : 58.39 dBA

Total Leq All Segments: 58.39 dBA


Road data, segment # 1: Yonge (day/night)
-----------------------------------------
Car traffic volume  : 11115/1235  veh/TimePeriod  *
Medium truck volume :   351/39    veh/TimePeriod  *
Heavy truck volume  :   234/26    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

   24 hr Traffic Volume (AADT or SADT):  12500
   Percentage of Annual Growth        :   4.00
   Number of Years of Growth          :   1.00
   Medium Truck % of Total Volume     :   3.00
   Heavy Truck  % of Total Volume     :   2.00
   Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Yonge (day/night)
---------------------------------------
Angle1   Angle2          : -90.00 deg   90.00 deg
Wood depth               :      0       (No woods.)
No of house rows         :      0 / 0
Surface                  :      2       (Reflective ground surface)
Receiver source distance :  25.00 / 25.00  m
Receiver height          :  16.50 / 16.50  m
Topography               :      1       (Flat/gentle slope; no barrier)
Reference angle          :   0.00


Results segment # 1: Yonge (day)
--------------------------------

Source height = 1.19 m

ROAD (0.00 + 64.43 + 0.00) = 64.43 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
  -90     90   0.00  66.65   0.00  -2.22   0.00   0.00   0.00   0.00  64.43
-------------------------------------------------------------------------------
```

Segment Leq : 64.43 dBA

Total Leq All Segments: 64.43 dBA

Results segment # 1: Yonge (night)

Source height = 1.19 m

ROAD (0.00 + 57.90 + 0.00) = 57.90 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	60.12	0.00	-2.22	0.00	0.00	0.00	0.00	57.90

Segment Leq : 57.90 dBA

Total Leq All Segments: 57.90 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 66.04
(NIGHT): 61.16

Appendix E

Supporting Information

Harry Cai

From: Kevin Bushell <kevin.bushell@schlegelvillages.com>
Sent: September 17, 2024 8:46 AM
To: Harry Cai; Sheeba Paul
Cc: Brad Schlegel; Peter Brouwers
Subject: FW: Noise Feasibility Study for 800 Yonge Street

Hi Harry

Please see responses below to the questions regarding the loading dock at Barrie SV prepared by our Director of Facilities, Peter Brouwers.

When can we expect the revise Noise Report to be available?

We are planning on a re-submission of the Site Plan Application later this week.

Thanks

Kevin

Kevin Bushell
Director of Site Development

Schlegel Villages
325 Max Becker Drive, Suite 201
Kitchener ON
Mobile: 519-872-8244
schlegelvillages.com

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From: Peter Brouwers <Peter.Brouwers@SchlegelVillages.com>
Sent: September 16, 2024 6:38 PM
To: Kevin Bushell <kevin.bushell@schlegelvillages.com>
Subject: RE: Noise Feasibility Study for 800 Yonge Street

Hi Kevin,

1. What does the loading area service? Restaurant or moving area?

- Deliveries of food and supplies and removal of recycling and waste for Long Term Care

2. How frequent are truck deliveries? Once a day, once a week?
3. Will these be regularly scheduled deliveries or on an as needed basis (infrequent)?

- Food Deliveries – 2 x per week - scheduled
- Supply Deliveries – 2 x per week – as needed
- Waste Removal – 1 x per week - scheduled
- Recycling Removal – 3 x per week - scheduled

4. When will deliveries occur? Daytime only (7 am to 7 pm) or evening (7 pm to 11 pm) or nighttime (11 pm to 7 am)?
- Deliveries between 8AM and 5PM
- Waste and Recycling between 7AM and 4PM
5. What type of trucks ? medium trucks, tractor trailers, cube vans? Do the trucks have reefer units?
- Combination of medium straight trucks, cube vans, medium size semi trucks with refrigeration, front load recycling and rear load roll off waste trucks
6. Will the trucks idle ? and for how long?
- Refrigeration trucks may idle during delivery for 30 to 45 minutes

PETER BROUWERS
Director of Facilities and Environmental Services

SCHLEGEL VILLAGES
325 Max Becker Drive, Suite 201
Kitchener ON N2E 4H5
519.504.7919
peter.brouwers@schlegelvillages.com
www.schlegelvillages.com

From: Kevin Bushell <kevin.bushell@schlegelvillages.com>
Sent: September 16, 2024 8:15 AM
To: Peter Brouwers <Peter.Brouwers@SchlegelVillages.com>
Subject: FW: Noise Feasibility Study for 800 Yonge Street

Hi Pete

I hope all is well.

Could you provide a response below for the preposed loading dock for Barrie SV.

We are planning on re-submitting this week for site plan approval and I need to revise the Noise Study for the re-submission.

Thanks

Kevin

From: Harry Cai <hcai@hgcengineering.com>
Sent: September 13, 2024 11:58 AM
To: Kevin Bushell <kevin.bushell@schlegelvillages.com>; Sheeba Paul <spaul@hgcengineering.com>
Subject: RE: Noise Feasibility Study for 800 Yonge Street

Hi Kevin,

We have not addressed this comment in the report – I don't believe we were made aware of this.

Typically, we do account for loading/trucking activities for facilities such as grocery stores, warehouses, and industrial facilities that regularly receive goods/send out goods.

However, for mostly residential uses or facilities that have infrequent loading/trucking activities, occasional loading activities are not considered as “stationary sources of noise” as per the Ministry guidelines and are typically exempt for the assessment in terms of land-use compatibilities.

The following are our questions regarding the loading area of Phase I. If you don’t know the details for now, please provide an estimate based on the anticipated use of that space. This information will help us determine 1) if we need to assess it, and 2) how to assess it (if the need arises)

1. What does the loading area service? Restaurant or moving area?
- Deliveries of food and supplies and removal of recycling and waste
2. How frequent are truck deliveries? Once a day, once a week?
3. Will these be regularly scheduled deliveries or on an as needed basis (infrequent)?
- Food Deliveries – 2 x per week - scheduled
- Supply Deliveries – 1 x per week – as needed
- Waste Removal – 1 x per week - scheduled
- Recycling Removal – 3 x per week - scheduled
4. When will deliveries occur? Daytime only (7 am to 7 pm) or evening (7 pm to 11 pm) or nighttime (11 pm to 7 am)?
- Deliveries between 8AM and 5PM
- Waste and Recycling between 7AM and 4PM
5. What type of trucks ? medium trucks, tractor trailers, cube vans? Do the trucks have reefer units?
- Combination of cube vans, medium size semi trucks with refrigeration, front load recycling and rear load roll off waste trucks
6. Will the trucks idle ? and for how long?
- Refrigeration trucks may idle during delivery for 30 to 45 minutes

Please let us know if you have any questions.

Thank you.

Harry Ao Cai, PEng
HGC Engineering **NOISE | VIBRATION | ACOUSTICS**
Howe Gastmeier Chapnik Limited
t: 905.826.4044 x297

Any conclusions or recommendations provided by HGC Engineering in this e-mail or any attachments have limitations.

From: Kevin Bushell <kevin.bushell@schlegelvillages.com>
Sent: September 12, 2024 11:25 AM
To: Harry Cai <hcai@hgcengineering.com>; Sheeba Paul <spaul@hgcengineering.com>
Cc: Brad Schlegel <bschlegel@rbjschlegel.com>; Ray Duhamel (RDuhamel@jonesconsulting.com) <RDuhamel@jonesconsulting.com>; Rod Alderson <rod.alderson@kwasitedev.com>
Subject: FW: Noise Feasibility Study for 800 Yonge Street

Harry/Sheeba

Please see emails sting below regarding the revised Noise Report for 800 Yonge Street, Barrie.

Could you please review and comment an/or revised the Report ASAP.

Thanks

Kevin

Kevin Bushell
Director of Site Development

Schlegel Villages
325 Max Becker Drive, Suite 201
Kitchener ON
Mobile: 519-872-8244
schlegelvillages.com

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From: Ray Duhamel <RDuhamel@jonesconsulting.com>
Sent: September 12, 2024 11:05 AM
To: Michele Freethy <Michele.Freethy@barrie.ca>
Cc: Andrew Gameiro <Andrew.Gameiro@barrie.ca>; Michelle Banfield <Michelle.Banfield@barrie.ca>; Rob <Rob@AndersonWellsmanArchitects.ca>; Kevin Bushell <kevin.bushell@schlegelvillages.com>; Brad Schlegel <bschlegel@rbjschlegel.com>
Subject: RE: Noise Feasibility Study for 800 Yonge Street

Hi Michele,

I have copied Kevin Bushell from Schlegel Villages who is the person who coordinated the Noise report and revisions. Kevin, can you please read the comment below and ask the Noise consultant to confirm whether they considered the impact of the loading spaces on the existing dwellings on Goodwin Drive. If they have, then please ask them to explain what section/page this is discussed in their report, and if not, then please have them assess.

Thanks.

Ray

Ray Duhamel, MCP, MCIP, RPP
Partner
The Jones Consulting Group Ltd.
229 Mapleview Drive East Unit 1, Barrie, ON, L4N 0W5
Phone (705) 734-2538 ext 226 Cell (705) 790-8928
Email rduhamel@jonesconsulting.com
www.jonesconsulting.com

From: Michele Freethy <Michele.Freethy@barrie.ca>
Sent: September 12, 2024 9:21 AM
To: Ray Duhamel <RDuhamel@jonesconsulting.com>

Cc: Andrew Gameiro <Andrew.Gameiro@barrie.ca>; Michelle Banfield <Michelle.Banfield@barrie.ca>
Subject: Noise Feasibility Study for 800 Yonge Street
Importance: High

Good morning Ray,

We re-circulated 800 Yonge Street with a comment due date of September 26, 2024. I will keep you posted of comments as they come in.

I had a quick look at the Noise Feasibility Study and the comment matrix and note that the comments under Section 13 of the Planning Comments in regard to the impact of the proposed loading spaces on the dwellings along Goodwin Drive weren't addressed in the revised report. Can you let us know the status of this comment? We kindly ask that you confirm whether the Noise Consultant considered the impact of the loading space on these residences.

Best regards,

Michele Freethy, MCIP, RPP
Senior Planner
Development Services Department

City of Barrie: City Hall, 70 Collier Street, P.O. Box 400, Barrie ON, L4M 4T5
705-739-4229 Ext. 4117
Please be advised that I work on a part-time basis, generally Monday, Tuesday and Thursdays. If I receive a message on a non-working day, I will respond when I am back "in the office".

Appendix F

City of Barrie and Metrolinx Comments

City of Barrie and Metrolinx Comments

Comments dated August 22, 2024

HGC Responses in Blue.

13. It is noted that loading spaces are proposed along the west side of the Long Term Care Home. Staff have reviewed the Noise Feasibility Study and require that the applicant confirm if the noise study included an evaluation of the impact of the proposed loading spaces on the sensitive (residential) land use to the south along Goodwin Drive. If not, staff require that the noise study be updated to address this and recommend any mitigation measures (such as enhanced fencing) required to bring the development into compliance with the MOECC Noise Guidelines under NPC-300. Metrolinx has advised that the report also must be revised to include new rail volume data and warning clauses as noted in their comments dated August 20, 2024.

Noted. An assessment of the loading bay activities is included in the updated report. Updated rail volumes from Metrolinx are also included and used in the analysis.

Appx A Comment 1. We are in receipt of a Noise Feasibility Study prepared by HGC Engineering, dated June 7, 2024. It should be noted that the Metrolinx rail volume data and warning clause referenced in the report have since been updated. The proponent may obtain Metrolinx's most up to date rail forecast data by submitting a request to raildatarequests@metrolinx.com. The updated warning clause language is prescribed under comment 2 below. A revised report should be submitted to our review.

Noted. Updated rail volumes from Metrolinx are included and used in the analysis of the updated report.