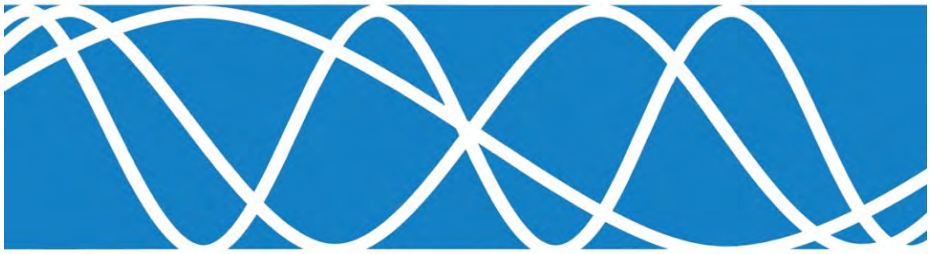
Noise and Vibration Feasibility Study

Proposed Mixed-Use Development
1376-1382 Plains Road East
Burlington, Ontario

April 10, 2026
HGC Project #: 02501025



Prepared for:

Rester Management
1117 Ste-Catherine O.,
Suite 303
Montréal, QC
H3B 1H9

HGC
NOISE | VIBRATION | ACOUSTICS

HGC Noise Vibration Acoustics
2000 Argentia Road, Plaza One, Suite 203
Mississauga, Ontario, L5N 1P7
t: 905.826.4044

Version Control
Noise and Vibration Feasibility Study
1376-1382 Plains Road East, Burlington, Ontario

Ver.	Date	Version Description	Prepared By
1.0	April 10, 2026	Noise and Vibration Feasibility Study in support of the approvals process	I. Basmanov

Prepared by:



Iouri Basmanov, P.Eng., INCE

Reviewed by:

Brian Chapnik, PhD, P.Eng.

HGC Noise Vibration Acoustics

Limitations

This document was prepared solely for the addressed party and titled project or named part thereof and should not be relied upon or used for any other project without obtaining prior written authorization from HGC Noise Vibration Acoustics (HGC). Further, the input of content from any document produced by HGC or related HGC intellectual property into any Artificial Intelligence tool is expressly prohibited. HGC accepts no responsibility or liability for any consequence of this document being used for a purpose other than for which it was commissioned. Any person or party using or relying on the document for such other purpose agrees and will by such use or reliance be taken to confirm their agreement to indemnify HGC for all loss or damage resulting therefrom. HGC accepts no responsibility or liability for this document to any person or party other than the party by whom it was commissioned.

Any conclusions and/or recommendations herein reflect the judgment of HGC based on information available at the time of preparation and were developed in good faith on information provided by others, as noted in the report, which has been assumed to be factual and accurate. Changed conditions or information occurring or becoming known after the date of this report could affect the results and conclusions presented.

Table of Contents

1 INTRODUCTION AND SUMMARY 1
2 SITE DESCRIPTION AND NOISE SOURCES 2
3 TRAFFIC NOISE ASSESSMENT 4
3.1 Road and Rail Noise 4
3.2 Railway Conditions for Residential Developments 5
3.3 Traffic Noise Assessment 6
3.3.1 Road Traffic Data 6
3.3.2 Rail Traffic Data 7
3.3.3 Traffic Noise Predictions 8
3.4 Traffic Noise Discussion and Recommendations 10
3.4.1 Building Façade Constructions 10
3.4.2 Indoor Living Areas 12
3.4.3 Outdoor Living Areas 12
4 STATIONARY NOISE SOURCE ASSESSMENT 13
4.1.1 Class I Industrial Facility 13
4.1.2 Class II Industrial Facility 13
4.1.3 Class III Industrial Facility 14
4.1.4 Screening Distances and Minimum Recommended Separation 14
4.2 Criteria for Stationary Sources of Sound 15
4.2.1 Receptor Classification – Class 1 versus Class 4 15
4.2.2 Noise Level Limits for Steady Sound Sources 16
4.3 Description/Inventory of Nearby Facilities 19
4.4 Predicted Noise Impact from Nearby Facilities 21
4.4.1 Assumed Operating Scenarios 21
4.4.2 Results 24
5 VIBRATION ASSESSMENT 25
6 WARNING CLAUSES 26
7 IMPACT OF THE DEVELOPMENT ON THE ENVIRONMENT 27
8 IMPACT OF THE DEVELOPMENT ON ITSELF 27
9 SUMMARY OF RECOMMENDATIONS 28
10 CONCLUSIONS 30
11 REFERENCES AND CITATIONS 31

List of Figures

Figure 1 – Key Plan
Figure 2 – Site Plan
Figure 3 – Daytime Sound Level Predictions from Traffic Sources
Figure 4 – Nighttime Sound Level Predictions from Traffic Sources
Figure 5 – Influence Areas According to MECP Guideline D-6
Figure 6 – Predicted Daytime Sound Levels from Minimum Hour Road Traffic
Figure 7 – Predicted Nighttime Sound Levels from Minimum Hour Road Traffic
Figure 8 – Surrounding Uses
Figure 9 – Daytime Steady Sound Sources
Figure 10 – Nighttime Steady Sound Sources
Figure 11 - Impulsive Noise Sources
Figure 12 – Daytime Steady Sound Levels
Figure 13 – Nighttime Steady Sound Levels
Figure 14: Impulsive Daytime Sound Levels from Sun Chemical Ltd
Figure 15: Impulsive Daytime Sound Levels from Ashland Chemicals

List of Appendices

APPENDIX A – Rail Guidelines
APPENDIX B – Traffic Data
APPENDIX C – STAMSON and STEAM Calibration Outputs
APPENDIX D – Environmental Registry Information

1 INTRODUCTION AND SUMMARY

HGC Noise Vibration Acoustics was retained by Rester Management to conduct a Noise and Vibration Feasibility Study for a proposed mixed-use development to be located at 1376-1382 Plains Road East, in Burlington, Ontario.

The proposed development consists of an application by 1000555724 Ontario Inc., 2731119 Ontario Inc., and Manor Care Homes Inc. to amend the 1997 City of Burlington Official Plan and Zoning By-law 2020, as amended, to permit the redevelopment of a 2,479.7 square metre (0.61 acre) site, known municipally as 1376 and 1382 Plains Road East in the City of Burlington. The proposed development includes a 25-storey mixed-use building with 283 residential units and 428 square metres of retail on the ground floor, with a total gross building floor area of 21,717 square metres, resulting in a density of 8.10. A total of 58 parking spaces and 156 bicycle parking spaces are proposed.

The primary sources of noise at the proposed development site were determined to be rail traffic on the railway corridor (Oakville and Halton Subdivisions) immediately south of the site and road traffic on Plains Road East to the north, with secondary contributions from road traffic on Highway 403/QEW, Brant Street, and Fairview Street. Relevant traffic data was obtained from CN, Metrolinx, the City of Burlington, Halton Region, and the MTO. The data was used to predict future traffic sound levels at the locations of the proposed building façades and outdoor amenity terrace. The predicted sound levels were compared to the guidelines of the Ministry of the Environment, Conservation and Parks (MECP) and the Region of Halton to develop associated traffic noise control recommendations for the proposed development.

The sound level predictions indicate that with suitable noise control measures integrated into the design of the proposed building, it is feasible to achieve the MECP guideline sound levels for transportation noise. An acoustic barrier is required for the outdoor amenity terrace. Central air conditioning systems are required. Upgraded building and glazing construction are required. When detailed floor plans and building elevations are available for the building,

window glazing requirements should be refined based on actual window to floor area ratios.

A preliminary assessment of stationary noise impacts from surrounding existing commercial/industrial facilities which may impact the proposed development has also been conducted. The results of this assessment indicate that noise impacts from the identified noise sources will not result in any excesses with respect to minimum-hour traffic noise or exclusionary minimum sound limits, and thus the standard MECP criteria for a Class 1 urban site are expected to be met. For greater compatibility, a Class 4 designation should be considered for the subject site. No special requirements or provisions are deemed to be necessary to address stationary noise sources potentially impacting the proposed development.

This assessment also considers the potential impact of ground-borne vibration from CN rail traffic on the tracks south of the proposed development. Site measurements and analysis of ground-borne vibration from rail traffic indicate that the associated vibrations impacting the proposed development are expected to be within the target criteria, without the need for additional mitigation measures.

Warning clauses are recommended to inform future owners and tenants of the traffic noise and vibration impacts, and proximity to commercial/industrial facilities.

2 SITE DESCRIPTION AND NOISE SOURCES

Figure 1 shows a key plan indicating the location of the proposed residential development. The proposed development is located at 1376-1382 Plains Road East, in Burlington, Ontario. A site plan was included in architectural drawings prepared by WZMH Architects, dated February 20, 2026, and is provided as Figure 2. The proposed development will include a 25-storey residential tower, retail space on the ground floor, two levels of parking, and indoor and outdoor amenity space on the 2nd floor.

HGC personnel visited the site in January 2026, to investigate the acoustical environment, to identify significant noise sources within the vicinity, and to measure vibration levels from rail traffic to the south of the site. The primary sources of transportation noise were confirmed to be rail traffic on the Oakville and Halton Subdivisions south of the site and road traffic on Plains Road East to the north.

The surrounding lands include existing residential and ground-floor retail uses to the north, across Plains Road East. Immediately to the west of the site is an automotive sales facility. Immediately to the east of the site is a commercial plaza that includes retail units conducting automotive sales and service. Located to the southeast and southwest of the site, across the rail corridor, are facilities for Sun Chemical Limited (1274 Plains Road East) and Ashland Chemicals (942 Brant Street). Further east are commercial plazas. The acoustical environment surrounding the site is urban in nature, and road and rail traffic on the adjacent roadways and rail corridor was confirmed to be the audibly dominant source of noise at grade. In general, sounds from the surrounding commercial/industrial facilities were not discernible over traffic sounds during the site visits.

A screening assessment was conducted, in accordance with MECP guideline D-6, to identify the facilities with potential noise impact on the development site. Several facilities surrounding the site were identified to have potential impacts, and these were modelled in further detail, as outlined in Section 4. Information on these facilities was obtained through observations conducted during the site visits, review of aerial photography, and publicly available information (from the Environmental Registry of Ontario and the Environmental Property Information Program). Assumed operating scenarios for each facility for which preliminary modelling was conducted are described in more detail below.

Guidelines published by CN Rail and by the Railway Association of Canada & Federation of Canadian Municipalities (RAC/FCM) [1] on behalf of the various railway authorities also recommend that a ground-borne vibration assessment

be performed for any dwellings located within 75 m of a rail source; a vibration assessment has been included in Section 5 of this report.

3 TRAFFIC NOISE ASSESSMENT

3.1 Road and Rail Noise

Guidelines for acceptable levels of road traffic noise impacting residential developments are contained in the MECP publication NPC-300, "Environmental Noise Guideline, Stationary and Transportation Sources – Approval and Planning," August, 2013 (release date October 21, 2013) [2], and are listed in Table 1 below. The values in Table 1 are energy equivalent (average) sound levels (L_{EQ}) in units of A-weighted deciBels (dBA).

Table 1: MECP Traffic Noise Criteria

Space	Daytime $L_{EQ\ (16\ hour)}$ Road / Rail	Nighttime $L_{EQ\ (8\ hour)}$ Road / Rail
Outdoor Living Areas	55 dBA	--
Inside Living/Dining Rooms	45 dBA / 40 dBA	45 dBA / 40 dBA
Inside Bedrooms	45 dBA / 40 dBA	40 dBA / 35 dBA

Daytime refers to the period between 07:00 and 23:00, while nighttime refers to the period between 23:00 and 07:00. The term "Outdoor Living Area" (OLA) is used in reference to an outdoor patio, backyard or terrace or other areas where passive recreation is expected to occur. Balconies and terraces that are less than 4 m in depth are not considered to be outdoor living areas under MECP guidelines, and accordingly the noise criteria are not applicable there. Large private terraces require consideration only if they are the only OLA for the occupant in general.

The guidelines in the MECP publication allow the daytime sound levels in an OLA 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 the 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. Halton Region has a minimum acoustic barrier height of 2.4 m and maximum acoustic barrier height of 3.5 m.

Indoor guidelines are 5 dBA more stringent for rail noise than for road noise, to account for the low frequency (rumbling) character of locomotive sound, and its greater potential to transmit through exterior wall/window assemblies.

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. If the sound level in the plane of a bedroom or living/dining room window is greater than 55 dBA and less than or equal to 65 dBA, the dwelling should be designed with a provision for the installation of central air conditioning in the future, at the occupant's discretion.

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; greater than 55 dBA during the nighttime or greater than 60 dBA during the daytime hours due to rail traffic noise.

MECP guidelines recommend masonry exterior walls from the foundation to the rafters as a minimum construction for any dwellings which are within 100 m of the right of way of the railway, where the 24 hour L_{EQ} is greater than 60 dBA. CN typically prefers masonry exterior walls for the first row of dwellings regardless of setback and sound level.

3.2 Railway Conditions for Residential Developments

Notwithstanding the noise criteria outlined above, CN and Metrolinx publish a recommended list of generic conditions, including specific setbacks, berm heights, and warning clauses, to reduce the incompatibility of development adjacent or in proximity to the railway right-of-way. Some of the items on this list relate to noise control, and should be taken into account, subject to

reasonable application. Where appropriate and relevant to noise, these are applied herein (e.g., warning clause). Copies of these requirements are included in Appendix A.

Similarly, RAC/FCM has published guidelines for new development in proximity to rail operations [1], which should be taken into account, subject to reasonable application. In general, the RAC/FCM guidelines are similar to and consistent with the guidelines published by CN and Metrolinx, as well as the guidelines published by the MECP.

GO Transit/Metrolinx and CNR guidelines require measurements of ground-borne vibration when residential dwelling units are to be located within 75 m of the right-of-way of a principal mainline. Vibration is typically measured in terms of oscillatory velocity or acceleration. The vibration guideline criteria are given in terms of ground-borne velocity. The guideline limit for Metrolinx and CNR is 0.14 mm/s RMS at frequencies from 4 Hz to 200 Hz.

3.3 Traffic Noise Assessment

3.3.1 Road Traffic Data

Road traffic data for Plains Road East was obtained from the City of Burlington in the form of a Turning Movement Count (TMC) and was projected to the year 2036. A day/night split of 90%/10% was assumed, along with a posted speed limit of 60 km/h. A commercial vehicle percentage of 2.8% was calculated and further split into 1.4% medium trucks, and 1.4% heavy trucks.

Road traffic data for Brant Street was obtained from Halton Region in the form of Ultimate Average Annual Daily Traffic (AADT). A day/night split of 90%/10% was assumed, along with a posted speed limit of 60 km/h. A commercial vehicle percentage of 4.0% was provided, split into 2.0% medium trucks and 2.0% heavy trucks.

Road traffic data for Fairview Street was obtained from the City of Burlington Open Data portal in the form of an AADT count from 2022, which was projected to the year 2036. A day/night split of 90%/10% was used, along with a posted

speed limit of 50 km/h. A commercial vehicle percentage of 4.0% was assumed, split into 2.0% medium and 2.0% heavy trucks.

Road traffic for Highway 403 and the QEW was obtained from the Ministry of Transportation (MTO) in the form of 24-hour counts and were projected to the year 2036 using a 2.5% per year growth rate. Hourly traffic data for Highway 403 was only provided for eastbound traffic; the eastbound AADT volume was doubled to account for vehicular traffic going westbound. The provided day/night splits were applied to each roadway, along with a posted speed limit of 100 km/h. A commercial vehicle percentage of 25% was provided by the MTO and further split into 6.3% medium trucks, and 18.8% heavy trucks (a split of 75% and 25% heavy and medium trucks from the total commercial percentage), according to MTO procedures [3].

Table 2 below summarizes the road traffic volume data used in this study. Road traffic data is included in Appendix B.

Table 2: Road Traffic Data

Roadway	AADT	Day / Night Split [%]	Trucks Percentage [%]		Speed Limit [km/h]
			Medium	Heavy	
Plains Road East *Projected to 2036*	21 897	90 / 10	1.4	1.4	60
Brant Street *Ultimate*	55 000	90 / 10	2.0	2.0	60
Fairview Street *Projected to 2036*	39 782	90 / 10	2.0	2.0	50
Highway 403 *Projected to 2036*	274 597	83 / 17	18.8	6.3	100
QEW *Projected to 2036*	190 882	87 / 13	18.8	6.3	100

3.3.2 Rail Traffic Data

Metrolinx traffic data (GO Transit and UP Express) was provided for the year 2035 and CN/VIA data for the Oakville and Halton Subdivision was provided for the years 2025 and 2020, respectively. CN was contacted for updated traffic data along both railways, but a response was not received at the time of

writing. For the purposes of this study, traffic volumes were assumed to grow at a conservative rate of 2.5% per year, and average future volumes that will exist in ten years (2036) were then calculated as required by MECP guidelines. The rail volumes and other inputs used in the analysis are summarized in Table 3. As requested by Metrolinx, all Metrolinx locomotives have been modelled as diesel type. Rail traffic data is contained in Appendix B.

Table 3: Rail Traffic Data Projected to 2036

Type of Train	Number of Trains Day/Night	Maximum Number of Locomotives	Maximum Number of Cars	Max Speed Limit [mph]
Lakeshore West GO – Diesel, Oakville Subdivision	132 / 20	1	10	95
Lakeshore West GO – Electric, Oakville Subdivision	192 / 54	1	10	95
CN Passenger (VIA), Oakville Subdivision	18 / 0	2	10	80
CN Way Freight, Oakville Subdivision	5 / 3	4	25	60
CN Freight, Halton Subdivision	15 / 6	4	140	50
CN Way Freight, Halton Subdivision	3 / 0	4	25	50

*All Metrolinx traffic modelled as diesel trains as per correspondence with Metrolinx personnel.

3.3.3 Traffic Noise Predictions

To assess the levels of traffic noise that will impact the site, an acoustic model of the development was created and predictions were made using a numerical computer modelling package (*CadnaA version 2025*). The model is based on the methods from ISO Standard 9613-2.2, "*Acoustics - Attenuation of Sound During Propagation Outdoors*" [4], which accounts for reduction in sound level with distance due to geometrical spreading, air absorption, ground attenuation and acoustical shielding by intervening structures.

The road noise sources were included in the model as line sources producing equivalent sound pressure levels at a reference distance to those predicted by STAMSON 5.04, a computer algorithm developed by the MECP, based on the

daytime and nighttime traffic volumes presented in Section 3.3.1. Calibration sheets from STAMSON are included as Appendix C.

Metrolinx and VIA passenger rail traffic volumes were included in the model as line sources with sound power levels equivalent to those published in the Federal Transit Authority (FTA) noise prediction manual [5], consistent with noise evaluation reports published by Metrolinx for all of their current railway expansion projects.

The operation of CN freight traffic was included in the model as a line source producing equivalent sound pressure levels at a reference distance to those predicted by the STEAM module in STAMSON, based on the daytime and nighttime freight traffic volumes presented in Section 3.3.2. Calibration sheets from STEAM are included in Appendix C.

Predictions of overall sound levels from transportation sources were made at each façade associated with the proposed development and the proposed outdoor amenity terrace on the 2nd floor (prediction location R1 is indicated on Figure 2). Maximum predicted overall sound levels at the facades are presented in Figures 3 and 4. The results of these predictions are summarized in Table 4.

Table 4: Maximum Road / Rail / Total Traffic Sound Level Predictions [dBA]

Location		Daytime $L_{EQ\ (16\text{-}hr)}$	Nighttime $L_{EQ\ (8\text{-}hr)}$
Podium (Levels 2 and 3)	North Facade	68 / 62 / 69	62 / 60 / 65
	East Facade	65 / 67 / 69	60 / 65 / 66
	South Façade	59 / 72 / 72	53 / 70 / 70
	West Facade	65 / 71 / 72	60 / 69 / 69
Tower (Levels 4 to 25)	North Facade	68 / 62 / 70	63 / 60 / 65
	East Facade	66 / 69 / 71	61 / 67 / 68
	South Façade	60 / 73 / 74	55 / 71 / 71
	West Facade	66 / 71 / 72	61 / 69 / 70
Outdoor Amenity Terrace (R1), Level 2*		62 / 70 / 70	--

*Including the effect of a 1.1 m high solid guard or parapet at the perimeter of the terrace.

3.4 Traffic Noise Discussion and Recommendations

The sound level predictions indicate that the future traffic sound levels will exceed the MECP guidelines at the proposed development. The following discussion outlines the recommendations for ventilation requirements, upgraded building façade constructions and warning clauses to achieve the noise criteria stated in Table 1.

3.4.1 Building Façade Constructions

Given projected future sound levels at the building facades, MECP guidelines recommend that the building envelopes be designed so that indoor sound levels comply with the MECP noise criteria.

Preliminary calculations have been performed to determine the building envelope constructions likely to be required to maintain indoor sound levels within MECP guidelines. The calculation methods were developed by the National Research Council (NRC). They are based on the maximum predicted future sound levels at the building façades, and the anticipated areas of the façade components (walls, doors and windows) relative to the floor area of the adjacent room.

Exterior Wall Constructions

For the proposed building, MECP and CN guidelines typically require brick or masonry exterior walls from the foundations to the rafters or an acoustical equivalent for facades with exposure to the rail corridor. A typical brick veneer wall, with an insulated gypsum board partition on the inside, has an estimated sound transmission class (STC) rating of 54 or better. An equivalent to brick veneer construction for those portions of building facades in an urban environment near a rail corridor is typically achieved by using two layers of 16 mm type X gypsum board on separate framing behind spandrel panels, with batt insulation in the wall cavity.

It has been assumed in the analysis that sound transmitted through elements other than the glazing elements is negligible in comparison. Further input

regarding the design of the exterior walls can be provided during design development, as required.

Acoustical Requirements for Glazing

For the purposes of this preliminary analysis, typical window-to-floor areas were assumed to be 50%. Based upon these assumptions, the minimum acoustical requirement for the basic window glazing, including glass in fixed sections, swing or sliding doors, and operable windows, is provided in Table 5. In an urban environment such as this, we do not typically recommend less than STC-33, to address incidental noises in the environment which are not specifically modelled.

Table 5: Preliminary Glazing Requirements

Location / Facade	North	East	South	West
Podium (Levels 2 and 3)	33	35	40	39
Tower (Levels 4 to 25)	33	37	41	39

Note:
[1] Assumed window to floor area ratios of 50% for living/dining rooms and bedrooms.
[2] STC requirement refers to fixed glazing. Small leaks through operable doors and windows are assumed, however, tight weather seals should be provided to reduce such leakage to the extent feasible.
[3] When detailed floor plans and building elevations are available, the drawings should be reviewed to confirm exterior façade constructions and refine window glazing requirements based on actual window to floor area ratios.

These results indicate that the glazing for windows in the building closest to and facing the rail corridor must achieve higher sound transmission class (STC) ratings. Lower STC ratings may be achieved by using smaller window areas relative to the floor area. Operable sections, including doors and operable windows, must be well-fitted and weather-stripped in order to achieve the target STC values stated in the above table. Acoustical test data for the selected assemblies should be requested from the suppliers, to ensure that the stated acoustic performance levels will be achieved by their assemblies.

Once detailed floor plans and building elevations are finalized, window glazing requirements should be refined based on actual window to floor area ratios, noting that fixed, operable, and sliding door glazing can have different STC ratings, although any such optimization cannot be completed until the detailed plans and elevations are available.

3.4.2 Indoor Living Areas

Air Conditioning

The predicted future sound levels at all of the façades of the proposed development will be greater than 65 dBA during the daytime hours and/or greater than 60 dBA during the nighttime. To address these excesses, the MECP guidelines recommend that the dwelling units be equipped with central air conditioning systems, so that the windows can be closed.

3.4.3 Outdoor Living Areas

Due to the direct exposure to the rail corridor, the predicted sound level at the outdoor common amenity terrace is 70 dBA at prediction location R1, 15 dBA in excess of the MECP limit of 55 dBA. An acoustic barrier of 2.4 m minimum height is required for the amenity space, in accordance with the Halton Region noise abatement guidelines, which results in a mitigated sound level of 68 dBA at prediction location R1. To meet 60 dBA (not exceeding the limit by more than 5 dBA) at this location, a barrier in excess of 5 m in height would be required, which may not be feasible. Consideration could be given in detailed design to integrating some localized screens to reduce noise at selected seating areas, which are likely to be more effective than barriers at the perimeter. Consideration could also be given to including a rooftop outdoor amenity terrace, which may be preferable for passive outdoor uses (e.g., sitting areas), and programming the podium outdoor amenity terrace for active amenity or other noise-insensitive uses (e.g., outdoor fitness, pet relief areas).

Further refinement of barrier recommendations or layouts can be provided at the site plan approval stage, in conjunction with the associated grading, outdoor amenity terrace landscaping, and wind mitigation design requirements.

Note that all acoustical barriers must be solid and reasonably free of gaps, with a preferred surface density of 20 kg/m^2; subject to technical justification, the surface density can be reduced to no lower than 10 kg/m^2.

4 STATIONARY NOISE SOURCE ASSESSMENT

MECP Guidelines D-1, 'Land Use Compatibility' and D-6 'Compatibility Between Industrial Facilities and Sensitive Land Uses' were prepared to address the potential incompatibility of industrial land uses and noise sensitive land uses in relation to land use approvals under the Planning Act. These guidelines recommend that studies be conducted to investigate the feasibility of providing sufficient mitigation when noise sensitive land uses are proposed within the potential zone of influence of an existing industry. Mitigation can be provided at the source or can be incorporated on the development lands.

In planning a sensitive land use near an existing industrial area, Guideline D-6 suggests certain potential zones of influence for the industry, depending on the characterization of that industry. Three classes of industry are defined, as follows:

4.1.1 Class I Industrial Facility

A place of business for a small scale, self-contained plant or building which produces/stores a product which is contained in a package and has a low probability of fugitive emissions. Outputs are infrequent and could be point source or fugitive emissions for any of the following: noise, odour, dust and/or vibration. There are daytime operations only, with infrequent movement of products and/or heavy trucks and no outside storage.

4.1.2 Class II Industrial Facility

A place of business for medium scale processing and manufacturing with outdoor storage of wastes or materials (i.e., it has an open process) and/or there are periodic outputs of minor annoyance. There are occasional outputs of either point source or fugitive emissions for any of the following: noise, odour, dust and/or vibration, and low probability of fugitive emissions. Shift operations

are permitted and there is frequent movement of products and/or heavy trucks during daytime hours.

4.1.3 Class III Industrial Facility

A place of business for large scale manufacturing or processing, characterized by: large physical size, outside storage of raw and finished products, large production volumes and continuous movement of products and employees during daily shift operation. It has frequent outputs of major annoyance and there is high probability of fugitive emissions.

4.1.4 Screening Distances and Minimum Recommended Separation

For screening purposes, Guideline D-6 outlines some potential influence areas for the different classes of industry. Outside these potential influence areas, it is unlikely that an industry which has been appropriately classified will have significant impact.

- Class I – 70 metres
- Class II – 300 metres
- Class III – 1000 metres

Figure 5 shows the extent of these influence areas surrounding the subject site. Guideline D-6 acknowledges that the actual influence area of a specific industry or facility may be less, subject to site specific studies performed in accordance with guideline NPC-300, "Environmental Noise Guideline Stationary and Transportation Sources – Approval and Planning". Notwithstanding the actual influence area of an industry, in order to minimize the potential for future land use conflicts, the MECP recommends certain minimum separation distances, as follows:

- Class I – 20 metres
- Class II – 70 metres
- Class III – 300 metres

The MECP recognizes that these minimum separation distances may not always be viable in certain cases, particularly in those cases of redevelopment, infilling

and mixed-use areas, where the zoning or official plan has left no available land buffer. In those instances, the overall feasibility of the proposal is based on the anticipated adverse effects from the industrial use, including any mitigative measures that might be applied to address anticipated impacts.

4.2 Criteria for Stationary Sources of Sound

MECP Guideline NPC-300 is the applicable guideline for use in investigating Land Use Compatibility issues with regard to noise. Under this guideline, an industrial or commercial facility is classified as a stationary source of sound (as compared to sources such as traffic or construction, for example) for noise assessment purposes. A stationary noise source encompasses the noise from all the activities and equipment within the property boundary of a facility including regular on-site truck traffic, material handling, and mechanical equipment.

While the D-6 screening guideline discussed above does not specifically apply to commercial facilities, NPC-300 still requires that such facilities be assessed where there are potential noise sources that may result in non-negligible impacts. Note that commercial activities such as the occasional movement of customer/employee vehicles, deliveries to retail stores and restaurants and garbage collection are not of themselves considered to be significant noise sources in the MECP guidelines, and accordingly, these sources have not been considered in this study.

4.2.1 Receptor Classification – Class 1 versus Class 4

Under NPC-300, the sound level limits for stationary sources apply at the point of reception and vary depending upon the background sound and the character of the surrounding acoustic environment. The facade of a residence (i.e., the plane of a window), or any associated usable outdoor area is considered a point of reception. Background sound is defined to include road traffic and other man-made and natural sounds, excluding the stationary source(s) under assessment. Because the background sound at the site is dominated by man-made sounds during all daytime and nighttime hours, the vicinity is by default characterized as a Class 1 (urban) area under MECP guidelines.

However, the MECP noise guidelines provide for another type of receptor area, deemed a Class 4 area, which allows for greater minimum exclusionary sound limits and flexibility of receptor-based mitigation, subject to designation by the land use planning authority. A "Class 4 area" is defined in NPC-300 as an area or specific site that would otherwise be defined as Class 1 or 2 and which:

- is an area intended for development with new noise sensitive land use(s) that are not yet built;
- is in proximity to existing, lawfully established stationary source(s); and
- has formal confirmation from the land use planning authority with the Class 4 area classification which is determined during the land use planning process.

There are several good reasons for the Class 4 designation to be applied here in order to better recognize the unique urban condition and land use context of this area, including but not limited to:

- providing a greater allowance for potential minor noise impacts from surrounding employment or commercial uses;
- allowing for future changes or additions to surrounding industrial/commercial facilities without resulting in minor excesses;
- reducing the sensitivity of the prediction results to minor deviations in the assumptions or noise modelling;
- allowing for more design flexibility to address receptor-based controls under the MECP guidelines.

To enhance compatibility between the proposed development and surrounding existing uses, it is recommended that the City of Burlington provide a Class 4 designation for this site.

4.2.2 Noise Level Limits for Steady Sound Sources

The applicable noise criteria for steady sound sources, evaluated at any noise-sensitive receptor location, are the greater of the background sound level from road traffic at that location (in any hour that the sources may operate) and the minimum exclusionary listed below in Table 6. Exclusionary limits for emergency equipment (e.g., generators) are 5 dB greater than the sound level limits otherwise applicable to stationary sources.

Table 6: Exclusion Limits, Steady Sound Sources, LEQ (dBA)

Roadway	Daytime & Evening (7:00 – 23:00) Class 1 / Class 4	Nighttime (23:00 – 7:00) Class 1 / Class 4
Plane of Window	50 / 60	45 / 55
Outdoor Living Area	50 / 55	--

In general, the minimum one-hour background sound levels during daytime and nighttime hours can be established via continuous, automated measurement over a period of at least 48 hours, or can be modelled from road traffic data in areas where the background sound is dominated by road traffic.

For the purposes of this study, automated measurement of background sound was not conducted due to the possibility of contributions from the surrounding industries and commercial establishments, which must be excluded from the determination of background sound.

Instead, it was possible to model the background sound from hourly traffic data for Highway 403 and the QEW, and by estimating the minimum background traffic volumes for Plains Road East, Brant Street, and Fairview Street by applying a typical daily traffic distribution curve [6] to the AADT volumes stated in Table 2.

The traffic volumes for the minimum daytime and nighttime hours used to estimate the background sound levels are listed in Table 7 below. Commercial traffic percentages and roadway speed limits are assumed to be the same as those listed in Table 2 above.

Table 7: Minimum Hourly Traffic Volumes on Surrounding Roadways

Roadway	Daytime & Evening (7:00 – 23:00)	Nighttime (23:00 – 7:00)
Plains Road East	423	98
Brant Street	1 430	330
Fairview Street	732	169
Highway 403	3 312	926
QEW	2 471	719

These road traffic noise predictions indicate that the minimum background sound levels during both daytime and night-time hours are greater than the Class 1 exclusionary minimum limits at facades with some exposure to Highway 403/QEW, while the exclusionary limits apply at shielded locations further from the roadways. The results are shown graphically in Figures 6 and 7.

4.2.3 Noise Level Limits for Impulsive Sound Sources

Impulsive sound is typically characterized by brief, sharp increases in the sound level (e.g., a discrete bang or thump). Under guideline NPC-300, the exclusion limits for impulsive sounds differ depending on how frequently the impulses occur, as summarized in the following table:

Table 8: Exclusion Limits, Impulsive Sound, LLM (dBAI)

Number of Impulses per Hour	Daytime & Evening (7:00 – 23:00) Class 1/ Class 4	Nighttime (23:00 – 7:00) Class 1/ Class 4
9 or more	50 / 60	45 / 55
7 to 8	55 / 65	50 / 60
5 to 6	60 / 70	55 / 65
4	65 / 75	60 / 70
3	70 /80	65 / 75
2	75 / 85	70 / 80
1	80 / 90	75 / 85

The sound level limit for impulse sounds is characterized by the average impulse sound level (L_{LM}). This average impulse sound level is then evaluated, in the same manner as steady sounds, against the greater of the minimum background sound level and the applicable exclusionary limit, as described above.

4.3 Description/Inventory of Nearby Facilities

For each facility within the potential radius of influence of the subject site, a stationary noise source assessment was conducted. The modelling was based on publicly available information (e.g., information contained in existing CoAs, ECAs, EASRs, or RoSCs, included as Appendix D), through a review of aerial photography [7,8], site visit observations, and associated source sound emission levels for similar equipment or operations (based on data in our files from measurements conducted by HGC for similar past projects).

Figure 8, along with Table 9 below, identifies the nearby facilities surrounding the development site, as well as our preliminary assessment of the appropriate industrial classifications that apply to each industrial facility within the potential area of influence as per the D-6 guidelines. Commercial facilities are not classified but are discussed further below.

Table 9: Inventory of Neighbouring Facilities

ID	Facility	Address	Description of Operations	D-6 Industrial Class	Estimated Separation Distance (m)	D-6 Recommended Minimum Separation Distance (m)	D-6 Potential Area of Influence (m)	Certificate of Approval/ Environmental Compliance Approval / Environmental Activity and Sector Registry / Record of Site Condition
1	Smart Choice Auto Repair *(and other commercial units)*	1400 Plains Road East	Automotive service	I	<5	20	70	-
2	City Tire Burlington	1369 Plains Road East	Automotive service	I	<5	20	70	-
3	Carsup Automotive	1364 Plains Road East	Automotive service	I	51	20	70	-
4	Sun Chemical Limited	1274 Plains Road East	Printing ink chemical manufacturing	II	65	70	300	1946-8DWSMN
5	Ashland Chemicals	942 Brant Street	Chemical manufacturing	II	152	70	300	8-300-064-77-776*
6	Commercial Plaza	1030 Brant Street, 1435 Plains Road East	Commercial	-	172	-	-	-
7	Commercial Plaza	1235 Fairview Street	Commercial	-	483	-	-	7344-74TKQC*
8	Commercial Plaza	1881 Fairview Street, 892, 906, 920, 930 Brant Street	Commercial	-	222	-	-	21301*
9	Nalco Canada	1055 Truman Street	Water treatment chemical manufacturer	II	650	70	300	9850-DEJRJB
10	Thorat Threads Apparel Inc.	1134 Plains Road East	Commercial	-	885	-	-	85314*

*C of A, ECA, EASR, RoSC issued to another business at this address, unclear if still applicable.

4.4 Predicted Noise Impact from Nearby Facilities

The model was used to predict noise levels from each facility within the potential zone of influence of the development site, based on the observed and/or assumed noise sources and operating scenarios described below. The locations of the steady noise sources are presented in Figures 9 and 10, and the locations of the impulsive noise sources are presented in Figure 11.

4.4.1 Assumed Operating Scenarios

The analysis considers the following sound sources and operating assumptions for a predictable worst-case-hour based on site observations, aerial imagery, and typical operating scenarios for similar facilities.

Rooftop A/C units are generally assumed to operate at full capacity for 30 minutes per hour (equal to partial capacity for an entire hour) during daytime and evening hours, and for 15 minutes per hour during nighttime hours when a facility is closed (i.e., units on setback). Exhaust fans are assumed to operate continuously while a facility is open, and to be off when it is closed. The sound data for the facilities and sources described below is contained in Table 10.

Table 10: Source Sound Power Levels (dB re 10-12 W) for Sound Sources

Source	Octave Band Centre Frequency [Hz]								Overall [dBA]
	63	125	250	500	1k	2k	4k	8k	
Heavy Truck Pass-by	101	100	94	96	97	95	91	86	101
Idling Truck	96	91	88	88	91	90	81	70	95
Loading/Unloading (impulsive)	74	76	88	100	106	101	94	87	108
Rooftop HVAC Unit, 3-ton	-	63	66	70	71	68	62	53	75
Rooftop HVAC Unit, 5-ton	-	67	72	77	76	73	68	61	80
Rooftop HVAC Unit, 10-ton	-	92	88	87	83	78	72	67	88
Small Exhaust Stack	61	69	73	74	65	47	45	30	73
Medium Exhaust Stack (Paint Booth Exhaust Stack)	92	95	88	85	81	74	65	55	87
Open Bay Door	80	79	82	84	87	85	85	88	93
Garbage Compactor	87	87	84	82	82	78	72	69	86
Cooling Tower	109	110	108	102	96	93	91	90	105

Smart Choice Auto Repair (1400 Plains Road East)

The building housing Smart Choice Auto Repair is located east of the site. The facility provides automotive maintenance and repair and is assumed to operate during daytime (and possibly evening) hours only. This facility has 7 bay doors, all of which were conservatively assumed to be open continuously during a worst-case daytime hour during which a loud air wrench is used for a total of 5 minutes per hour in each bay (typically used for several seconds at a time, intermittently). Rooftop HVAC units were considered for this facility, as well as for the other commercial units in this building. The following was considered:

- 7 3-ton rooftop HVAC units
- 2 paint booth exhaust stacks
- 7 open bay doors.

City Tire Burlington (1369 Plains Road East)

The building housing City Tire Burlington is located east of the site. The facility provides tire sales and service and is assumed to operate during daytime (and possibly evening) hours only. This facility has 1 bay door, which was conservatively assumed to be open continuously during a worst-case daytime hour during which a loud air wrench is used for a total of 5 minutes per hour in each bay (typically used for several seconds at a time, intermittently).

Carsup Automotive (1364 Plains Road East)

The building housing Carsup Automotive is located west of the site. The facility provides automotive maintenance and repair and is assumed to operate during daytime (and possibly evening) hours only. This facility has 2 bay doors, which were conservatively assumed to be open continuously during a worst-case daytime hour during which a loud air wrench is used for a total of 5 minutes per hour in each bay (typically used for several seconds at a time, intermittently).

Sun Chemical Limited (1274 Plains Road East)

The Sun Chemical facility is located southwest of the site, providing chemical, printing-ink and industrial-ink manufacturing. This chemical warehousing facility, approximately 96,000 sq. ft. in area, is classified as Class II in the study. The site has regular weekday business hours, but it is assumed that

some of the sources associated with this facility operate 24 hours per day. The facility is less than 300 m away from the site. Thus, under D-6 guidelines, the development falls within the potential zone of influence of this facility.

The facility has an environmental compliance approval (ECA) on Environmental Registry of Ontario, implying that facility meets the stationary noise guidelines of NPC-300 at all existing noise-sensitive receptors.

At the west end of the facility there are 8 loading docks, and at the east end of the site it appears that trucks may manoeuvre to exit the site. Rooftop HVAC units, occasional deliveries via heavy trucks, the operation of a refuse compactor, and the operation of exhaust fans were considered. Specifically, the following were considered:

- 2 3-ton rooftop HVAC units
- 8 small exhaust stacks
- 6 medium exhaust stacks
- 1 garbage compactor operating for 5 minutes in a daytime-hour
- 6 daytime and nighttime-hour heavy truck movements
- 6 idling trucks (5 minutes per daytime and nighttime-hour)
- Unloading / loading impulses at loading dock (assumed to occur frequently).

Ashland Chemicals (942 Brant Street)

The Ashland Chemicals facility is located southeast of the site, providing chemical manufacturing serving a range of industrial and consumer sectors, including janitorial equipment supply, pool cleaning products, and swimming pool product supply. This chemical manufacturing facility is classified as Class II in the study. The site has regular weekday business hours, but it is assumed that some of the sources associated with this facility operate 24 hours per day. The facility is less than 300 m away from the site. Thus, under D-6 guidelines, the development falls within the potential zone of influence of this facility.

At the south end of the facility there is a depressed loading dock where deliveries may occur. Rooftop HVAC units, a cooling tower, occasional deliveries via heavy trucks, and the operation of exhaust fans were considered. Specifically, the following were considered:

- 2 3-ton rooftop HVAC units
- 2 5-ton rooftop HVAC units
- 14 small exhaust stacks
- 11 medium exhaust stacks
- 1 cooling tower
- 4 daytime and nighttime-hour heavy truck movements
- 4 idling trucks (5 minutes per daytime and nighttime-hour)
- Unloading / loading impulses at loading dock (assumed to occur frequently).

Other Facilities

As indicated in Table 9, and illustrated in Figures 5 and 8, the development is not within the potential zone of influence of any other industrial facilities.

4.4.2 Results

The maximum predicted daytime and nighttime sound levels from steady sound sources impacting the proposed development are shown in Figures 12 and 13. These levels approach but are within the Class 1 criteria (due to minimum hour road traffic). The predicted sound levels are also within the daytime Class 4 exclusionary limits and well within the nighttime Class 4 exclusionary limits.

Maximum predicted impulsive sound levels from loading / unloading activities at Sun Chemical Ltd. and Ashland Chemicals are shown in Figures 14 and 15, respectively. The predicted sound levels from loading / unloading activities at each facility are within the Class 1 exclusionary limits at the closest facades.

Thus, the standard MECP criteria for a Class 1 urban site are expected to be met. For greater compatibility, a Class 4 designation should be considered for the subject site. No special requirements or provisions are deemed to be necessary to address stationary noise sources potentially impacting the proposed development, based on the preliminary assessment conducted herein.

5 VIBRATION ASSESSMENT

The potential ground-borne vibration impact on the proposed development due to rail traffic was assessed based on vibration measurements conducted at the site in January 2026. Vibration measurements were conducted at the southeast corner of the site, shown as location V1 on Figure 2. Vibration levels were measured using a Wilcoxon 793V velocity transducer and recorded using a Hewlett Packard Model 3569A Two Channel Real-Time Frequency Analyzer. The instrumentation was verified to be in calibration before and after the measurements were conducted. The measurements captured the pass-bys of nine GO trains, two VIA trains, and three CN freight trains (up to 4 locomotives and upwards of 100 freight cars per train).

The table below shows the maximum measured ground-borne vibration velocity RMS magnitudes for each type of train, presented as the energy sum of all frequencies between 4 Hz and 200 Hz.

Table 11: Maximum Measured Ground-Borne Vibration Levels [mm/s RMS]

Vibration Measurement Location	Train Pass-by Description	Maximum Measured Vibration Level	Vibration Velocity Limit	Meets Limit?
V1, SE Corner of Site	Metrolinx/GO Trains	0.101	0.14	Y
	VIA Rail	0.038	0.14	Y
	CN Freight	0.085	0.14	Y

The results indicate that vibration velocities from train pass-bys are all below the guideline criteria of 0.14 mm/s RMS at the development site, and thus vibration mitigation measures are not required.

The guideline criteria for vibration are considered to be reasonable standards for acceptability. However, conformance with these standards does not imply that vibration levels will be imperceptible. Therefore, consideration should be given to including suitable warning clauses in the Development Agreements,

referenced in all sales or rental agreements for the residential suites. Recommended wording for warning clauses is outlined in Section 6 below.

6 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 dwelling units with anticipated traffic sound level excesses. Examples are provided below and follows the labels outlined in NPC-300. Such clauses are often included by reference to the Development Agreements in which they are contained.

Type 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 may on occasion interfere with some activities of the dwelling occupants as the sound levels exceed the sound level limits of the Ministry of the Environment, Conservation and Parks.

Type D:

> This dwelling unit has been supplied with a central air conditioning system which allows 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.

Type E:

> Purchasers/tenants are advised that due to the proximity of the nearby commercial and industrial facilities, noise from these facilities may at times be audible.

In addition, Metrolinx and CN require specific warning clauses to protect their interests where noise-sensitive uses are located close to a major railway corridor. Wording for such a clause (similar to that described in Appendix A), may read as follows:

> Warning: <Metrolinx> <Canadian National Railway Company> or its assigns or successors in interest has or have a rights-of-way within 300 metres from the land the subject hereof. There may be alterations to or expansions of the railway facilities on such rights-of-way in the future including the possibility that the railway or its assigns or successors as aforesaid may expand its operations, which expansion may affect the environment of the tenants in the vicinity, notwithstanding the inclusion of any noise and vibration attenuating measures in the design of the development and the building. <Metrolinx> <CNR> will not be responsible for any complaints or claims arising from the use of such facilities and/or operations on, over or under the aforesaid rights-of-way.

These sample clauses are provided only as examples, and can be modified by the owner's legal representative, in consultation with the railway authorities and/or the City, in order to suit site-specific requirements.

7 IMPACT OF THE DEVELOPMENT ON THE ENVIRONMENT

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 and/or rail traffic, at any potentially impacted residential point of reception (on or off site), to comply with MECP guidelines. Typical minimum ambient sound levels in the area are expected to be about 60 dBA during the day and about 5 dB less at night, at nearby residential receptors. Thus, any electromechanical equipment associated with this development (e.g. cooling towers, fresh-air handling equipment, etc.) should be designed such that they do not result in noise impact beyond these ranges.

8 IMPACT OF THE DEVELOPMENT ON ITSELF

Section 5.8.1.1 of the Ontario Building Code (OBC), released on January 1, 2024, specifies the minimum required sound insulation characteristics for demising partitions of dwelling units, 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, commercial or other mechanical 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 Registrar Bulletin 19 (B19) 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 to limit the potential intrusions of mechanical and electrical services of the buildings on its residents. If B19 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.

9 SUMMARY OF RECOMMENDATIONS

The following list summarizes the recommendations made in this report. The reader is referred to the previous sections of the report where these recommendations are discussed in more detail.

1. Upgraded glazing constructions are recommended for the proposed building as outlined in Section 3.4.1. When detailed floor plans and building elevations are available, a detailed review should be conducted to determine the required glazing and building façade constructions based on actual window-to-floor area ratios.

2. Central air conditioning is required for the proposed building. The location, installation and sound ratings of the air conditioning devices should comply with NPC-300, as applicable.

3. An acoustic barrier is required to protect the outdoor amenity terrace on the 2nd floor. The height of this barrier may need to be limited for practical purposes. See section 3.4.3 for detailed recommendations.

4. A preliminary acoustical analysis of the surrounding commercial/industrial facilities, based on aerial imagery of the area, observations during a site visit, publicly available information, and measurements of similar equipment from past projects, indicates that predicted sound levels under typical daytime and nighttime operating scenarios are expected to comply with the applicable MECP Class 1 limits at the future residential receptors in the development. For greater compatibility, a Class 4 designation should be considered for the subject site.

5. Warning clauses should be included in the property and tenancy agreements. Recommended wording for these clauses is provided in Section 6. Such clauses are often included by reference to the Development Agreements in which they are contained.

6. Demising assemblies must be selected to meet the minimum requirements of the Ontario Building Code (OBC). Where B19 certification is needed, an acoustical consultant is required to review details of demising constructions and mechanical/electrical equipment, when available, to help ensure that the noise impact of the development on itself are maintained within acceptable levels. Outdoor sound emissions should also be checked to ensure that any potential impacts on adjacent properties are suitably minimized and comply with the requirements of MECP guidelines.

10 CONCLUSIONS

The results of this study indicate that the proposed residential development at 1376-1382 Plains Road East is feasible from a noise and vibration impact perspective, with the inclusion of upgraded acoustical design features. Preliminary design recommendations are provided herein and can be developed in greater detail as the design proceeds.

A preliminary acoustical analysis of the surrounding commercial/industrial facilities, based on aerial imagery of the area, observations during site visits, publicly available information, and measurements of similar equipment from past projects, indicates that predicted sound levels under typical daytime and nighttime operating scenarios are expected to comply with the applicable MECP Class 1 limits at the future residential receptors in the development. For greater compatibility, a Class 4 designation should be considered for the subject site.

11 REFERENCES AND CITATIONS

1. *The Railway Association of Canada & Federation of Canadian Municipalities, "Guidelines for New Development in Proximity to Railway Operations", May 2013.*

2. *Ontario Ministry of the Environment, Conservation and Parks, Publication NPC-300, Environmental Noise Guideline – Stationary and Transportation Sources – Approval and Planning, August 2013.*

3. *Ministry of Transportation Ontario (MTO), "Environmental Guide for Noise", February 2022.*

4. *International Organization for Standardization, Acoustics – Attenuation of Sound during Propagation Outdoors – Part 2: General Method of Calculation, ISO-9613-2, Switzerland, 1996.*

5. *US Department of Transportation, Federal Transit Administration, "Transit Noise and Vibration Impact Assessment Manual", September 2018.*

6. *Scott M. Festin, United States Department of Transportation, Federal Highway Administration, "Summary of National and Regional Travel Trends: 1970-1995", May 1996.*

7. *Google Maps and Aerial Imagery, Internet application: maps.google.com.*

8. *Bing Maps and Aerial Imagery, Internet application: bing.com/maps.*

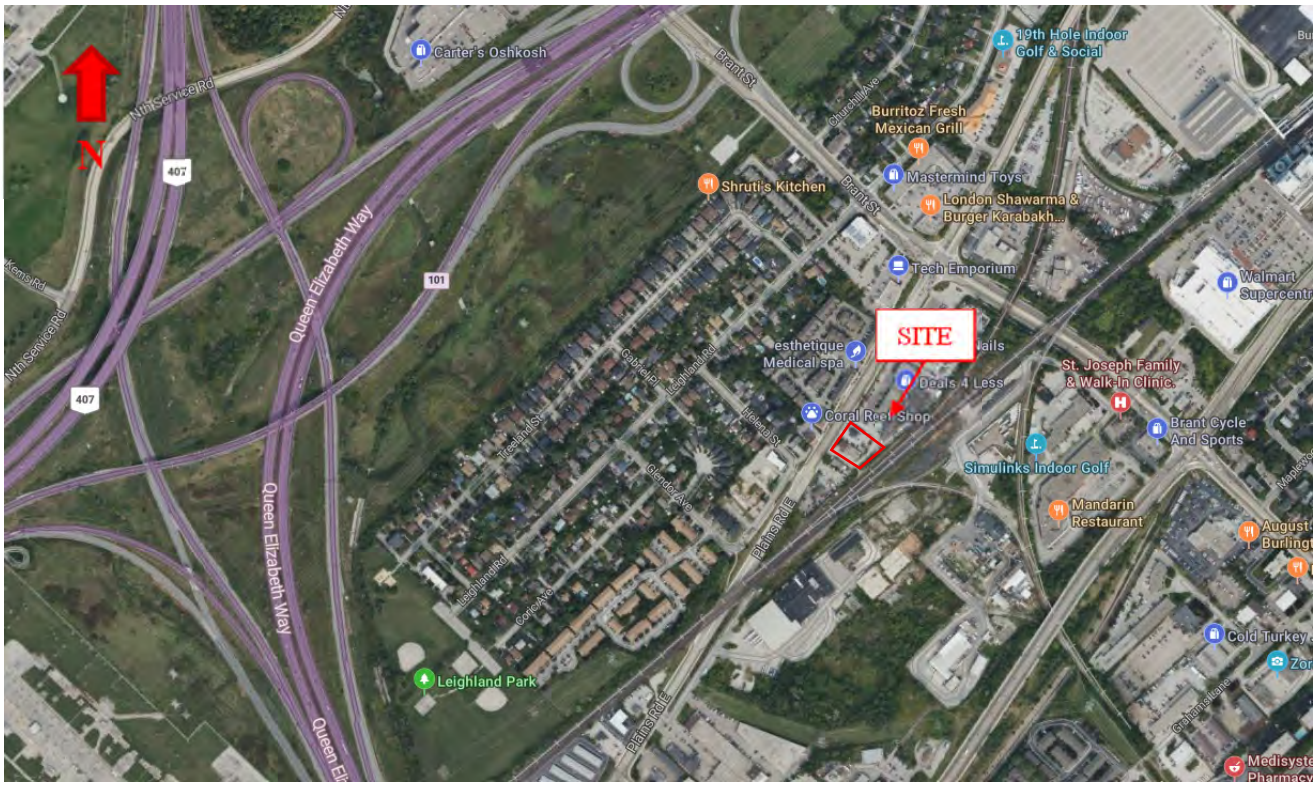


Figure 1: Key Plan



Figure 2: Site Plan

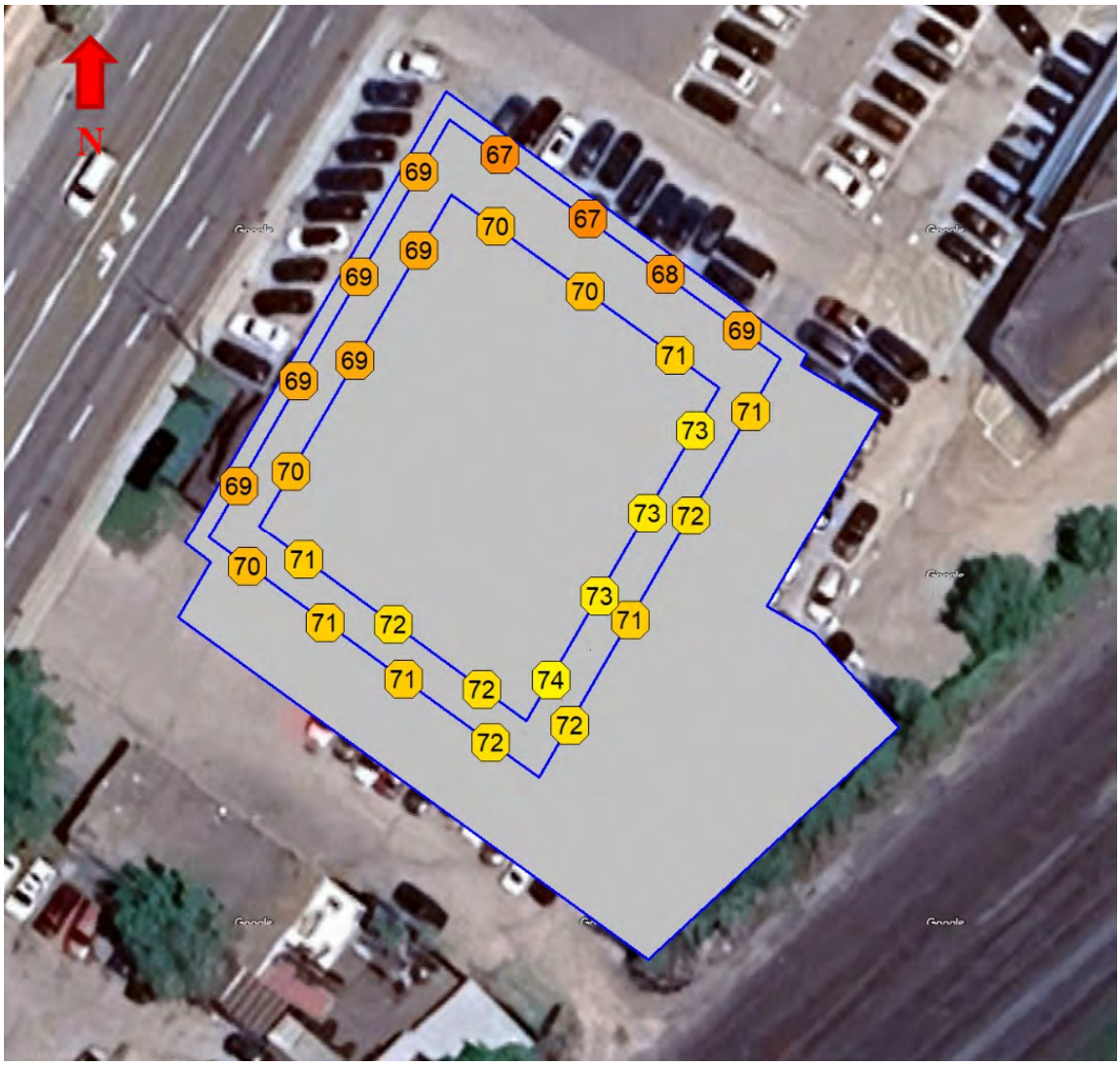


Figure 3: Daytime Sound Level Predictions from Traffic Sources

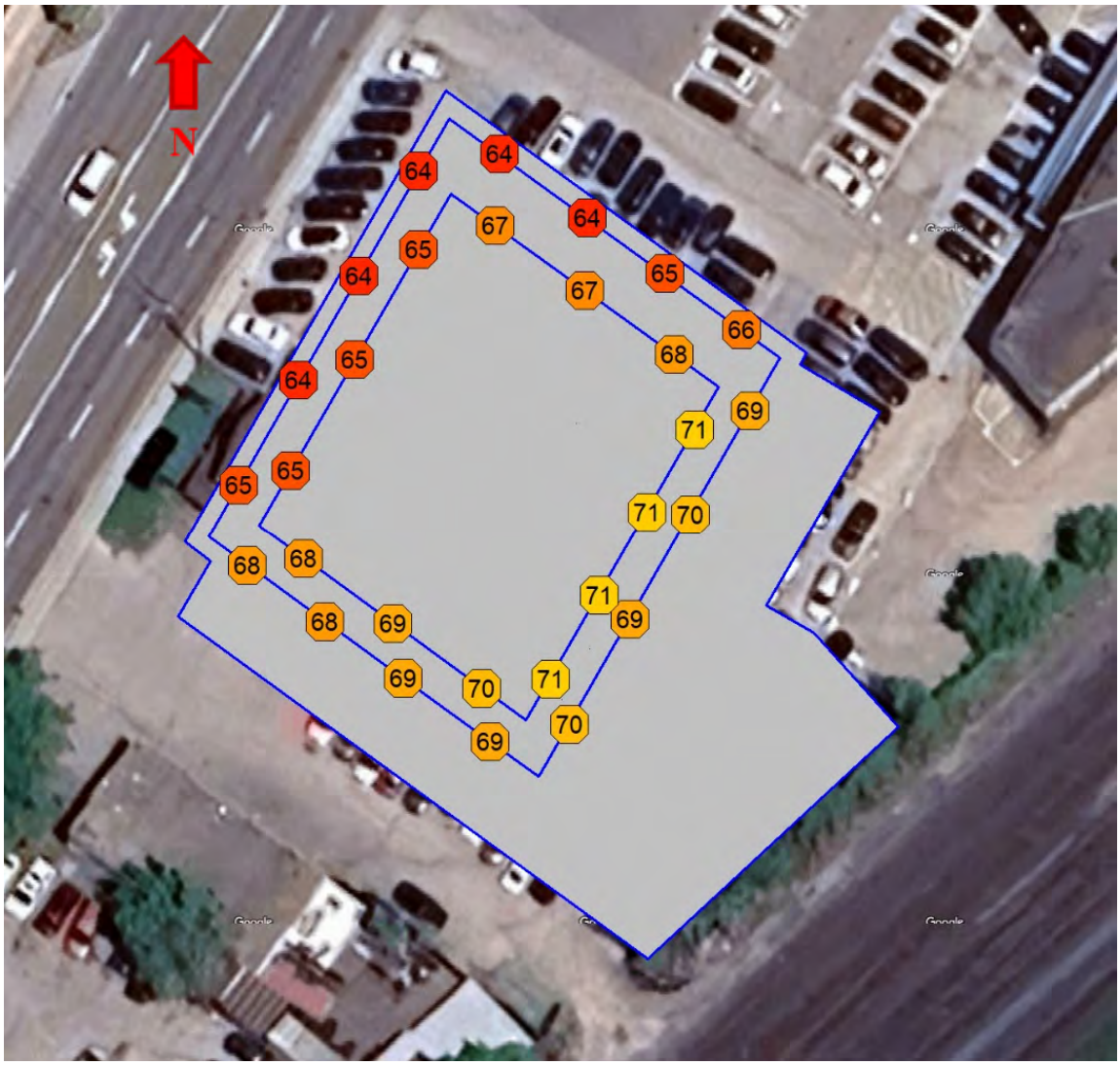


Figure 4: Nighttime Sound Level Predictions from Traffic Sources

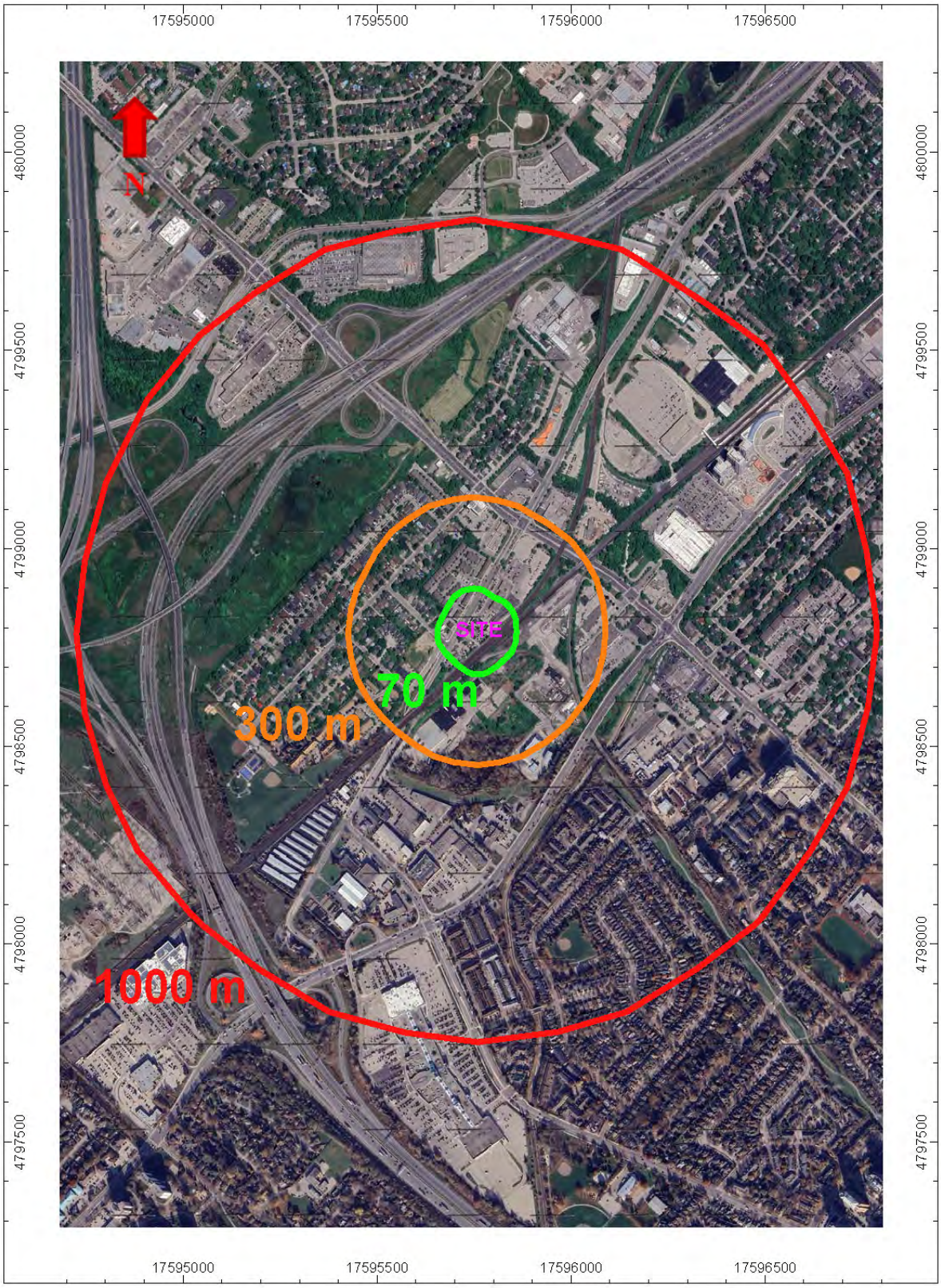


Figure 5: Influence Areas According to MECP Guideline D-6

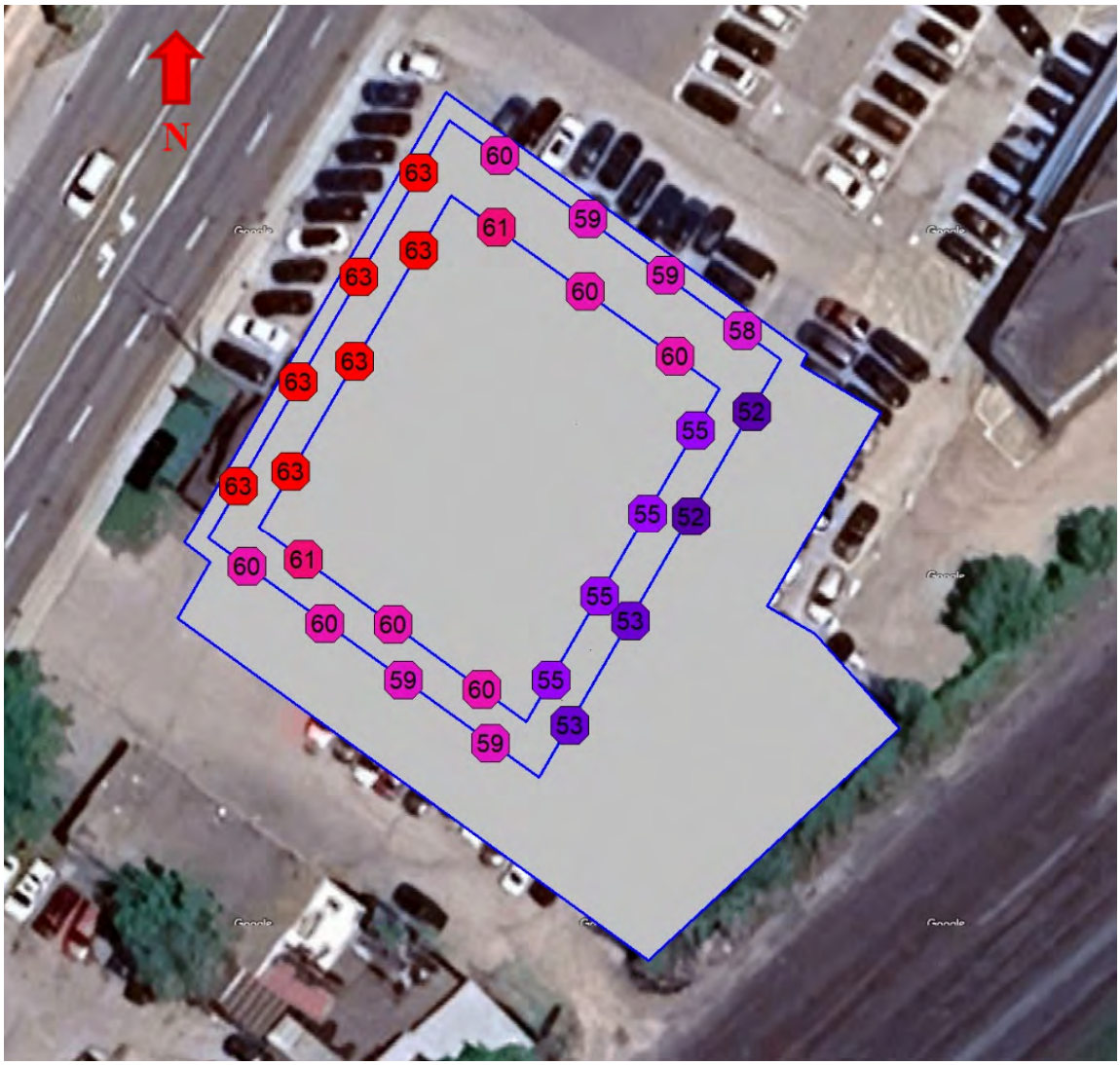


Figure 6: Predicted Daytime Sound Levels from Minimum Hour Road Traffic

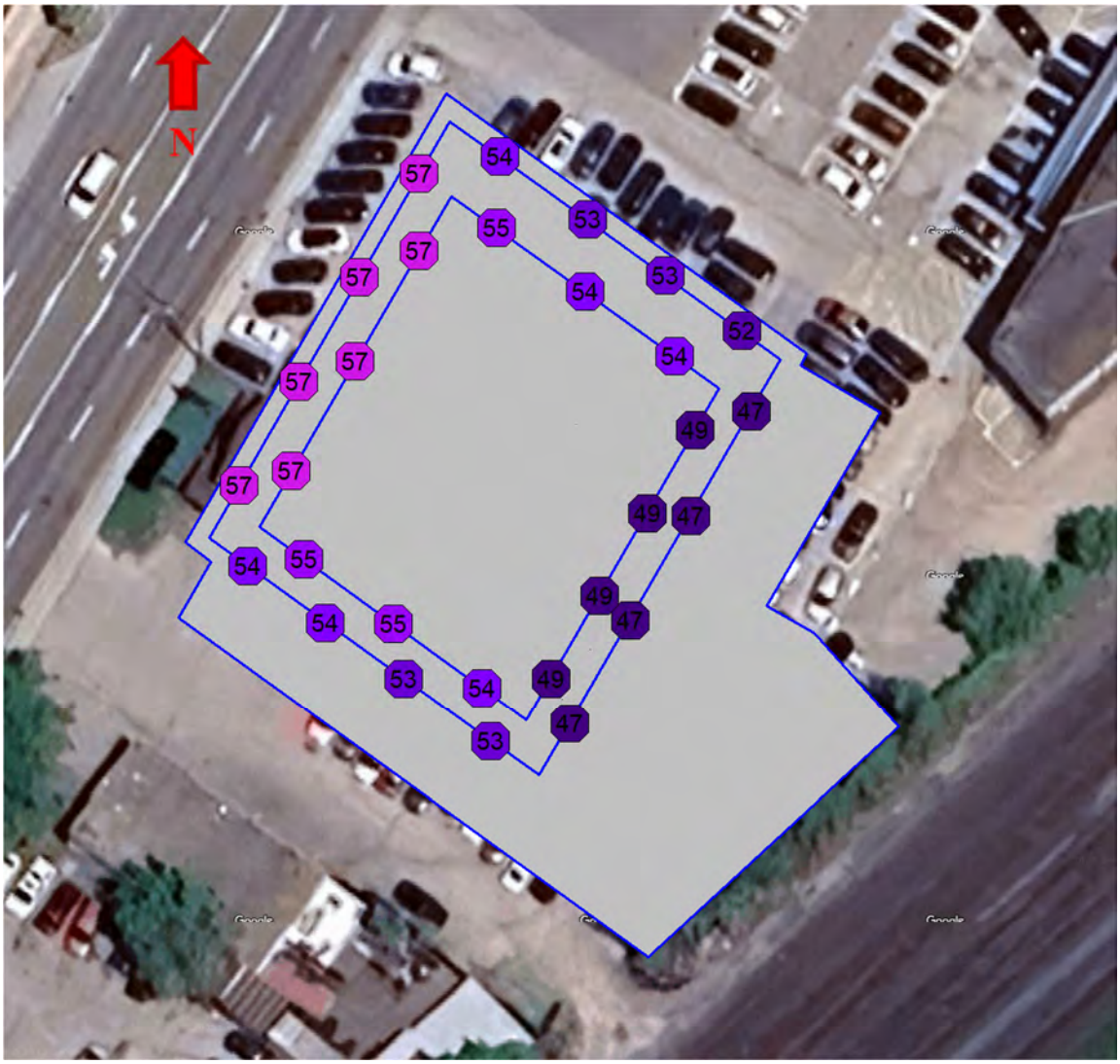


Figure 7: Predicted Nighttime Sound Levels from Minimum Hour Road Traffic

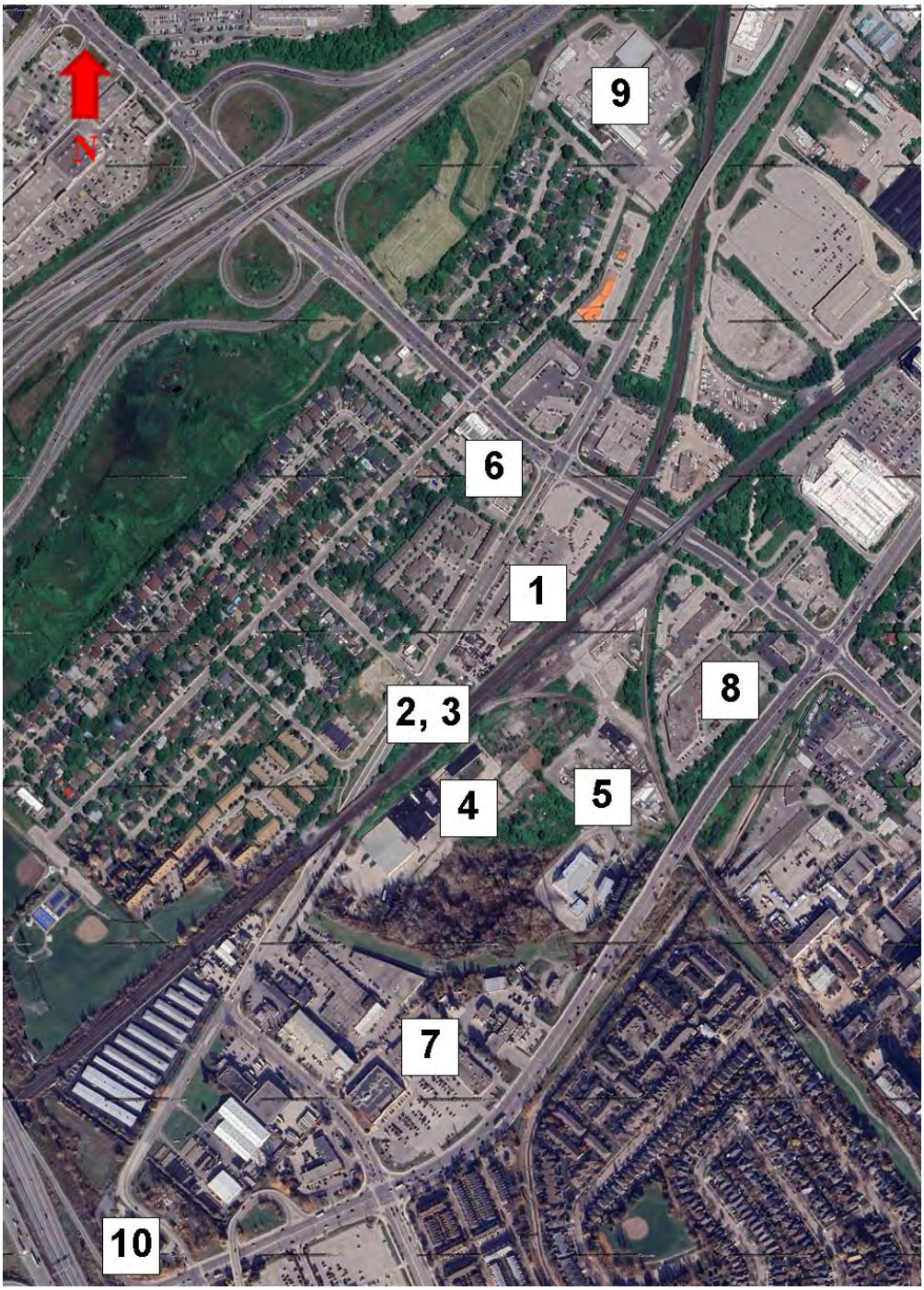


Figure 8: Surrounding Uses

1. Smart Choice Auto Report	6. Commercial Plaza
2. City Tire Burlington	7. Commercial Plaza
3. Carsup Automotive	8. Commercial Plaza
4. Sun Chemical	9. Nalco Canada
5. Ashland Chemicals	10. Throat Threads Apparel Inc.

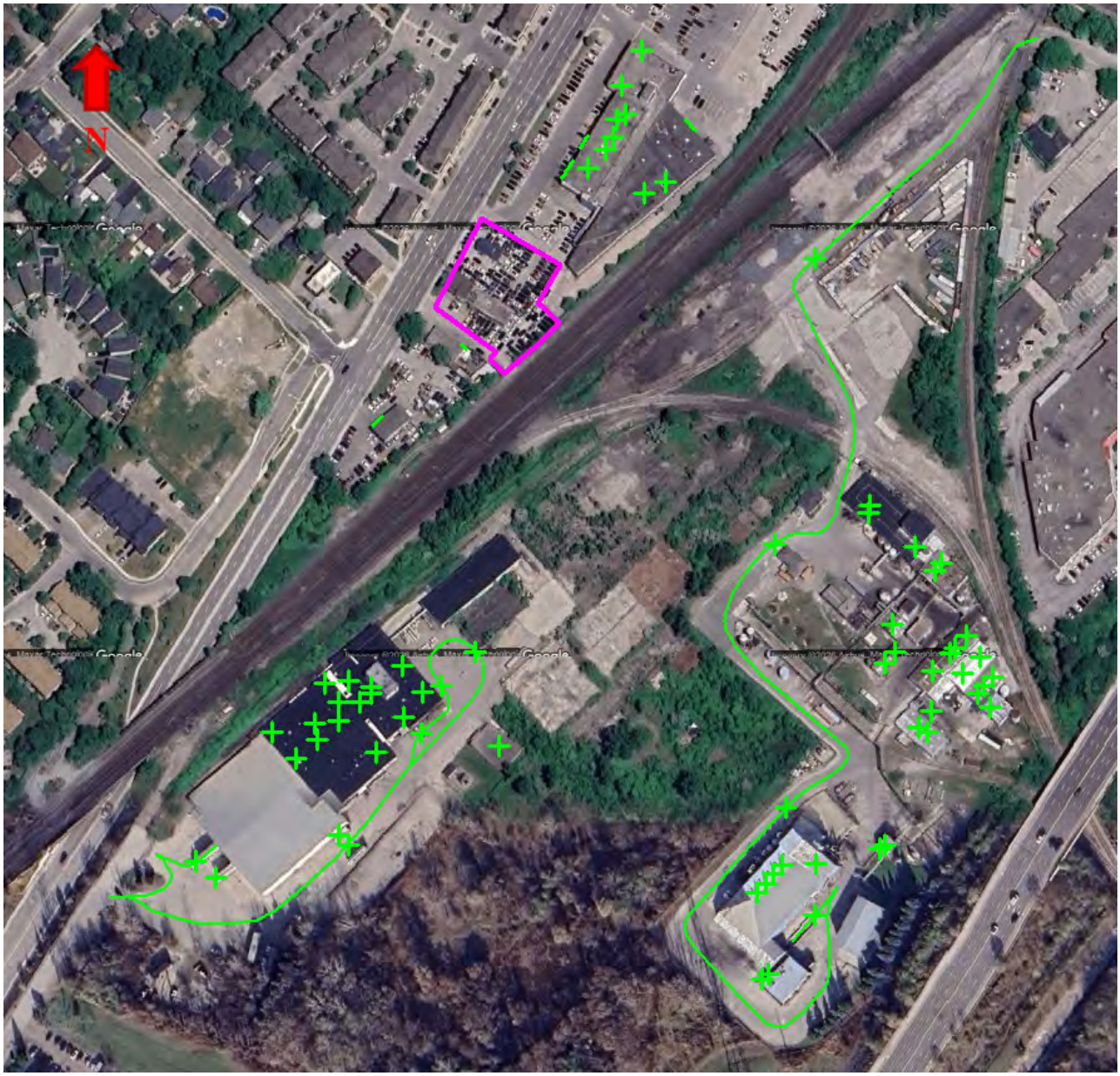


Figure 9: Daytime Steady Sound Sources

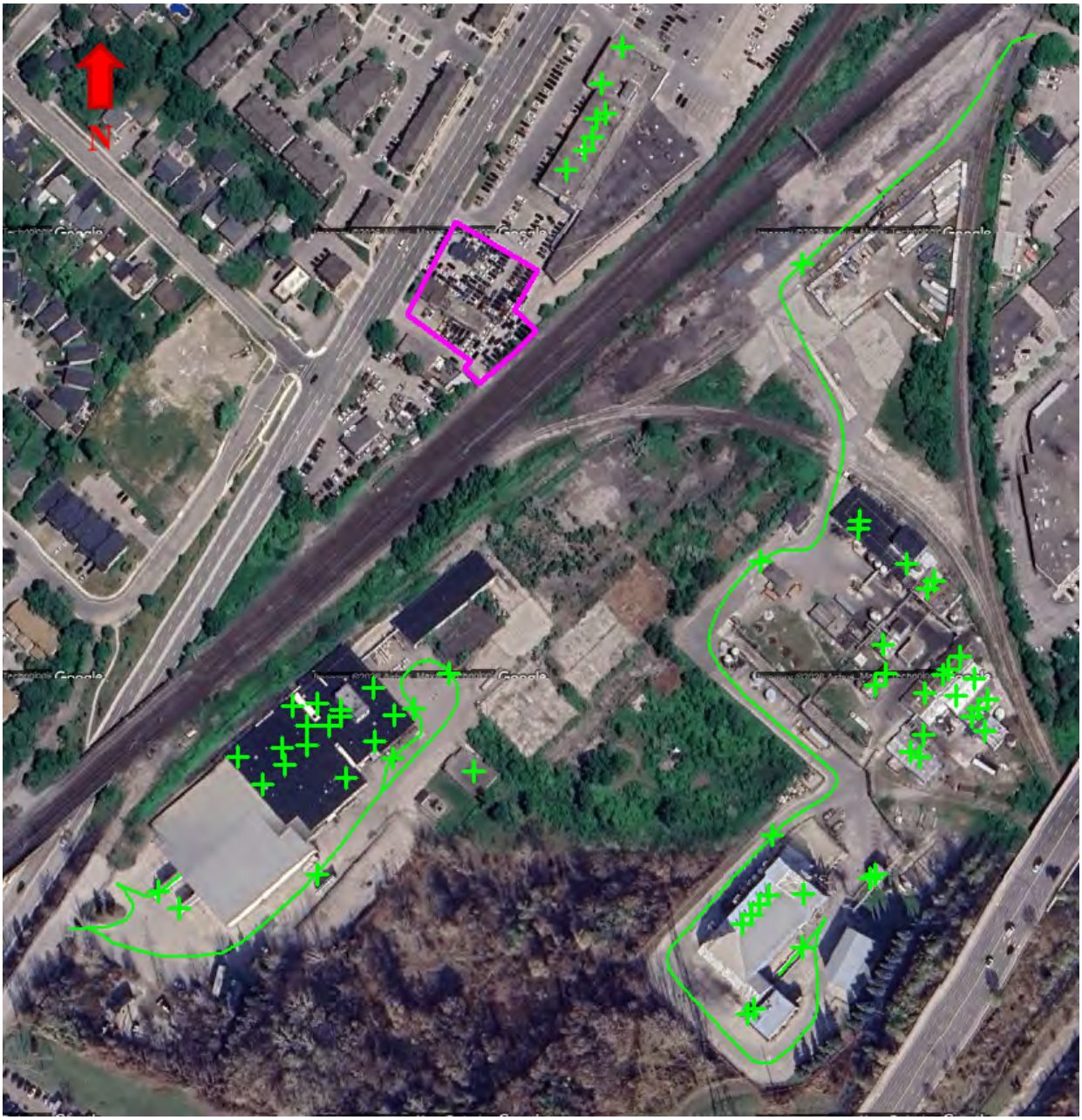


Figure 10: Nighttime Steady Sound Sources

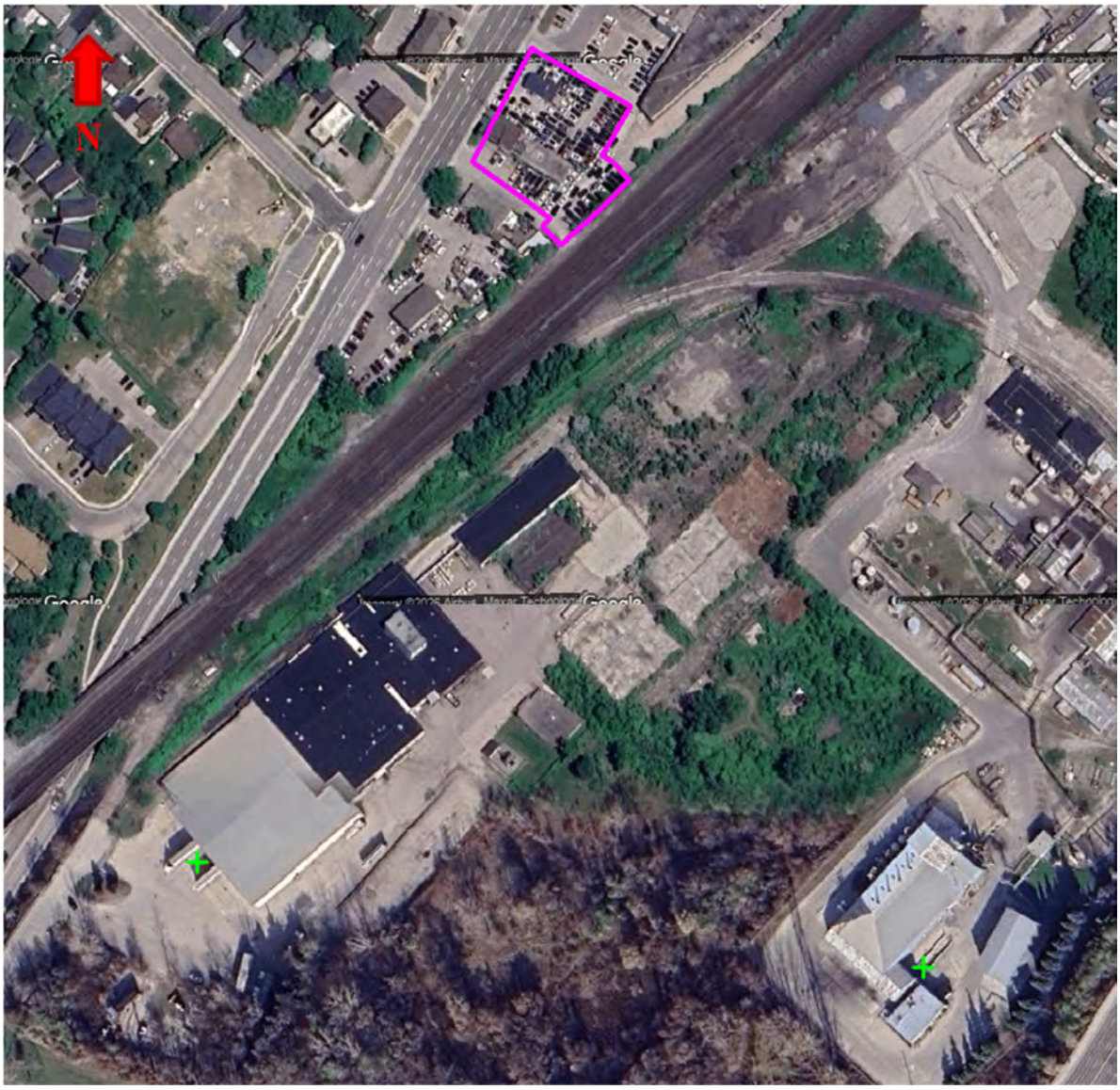


Figure 11: Impulsive Noise Sources

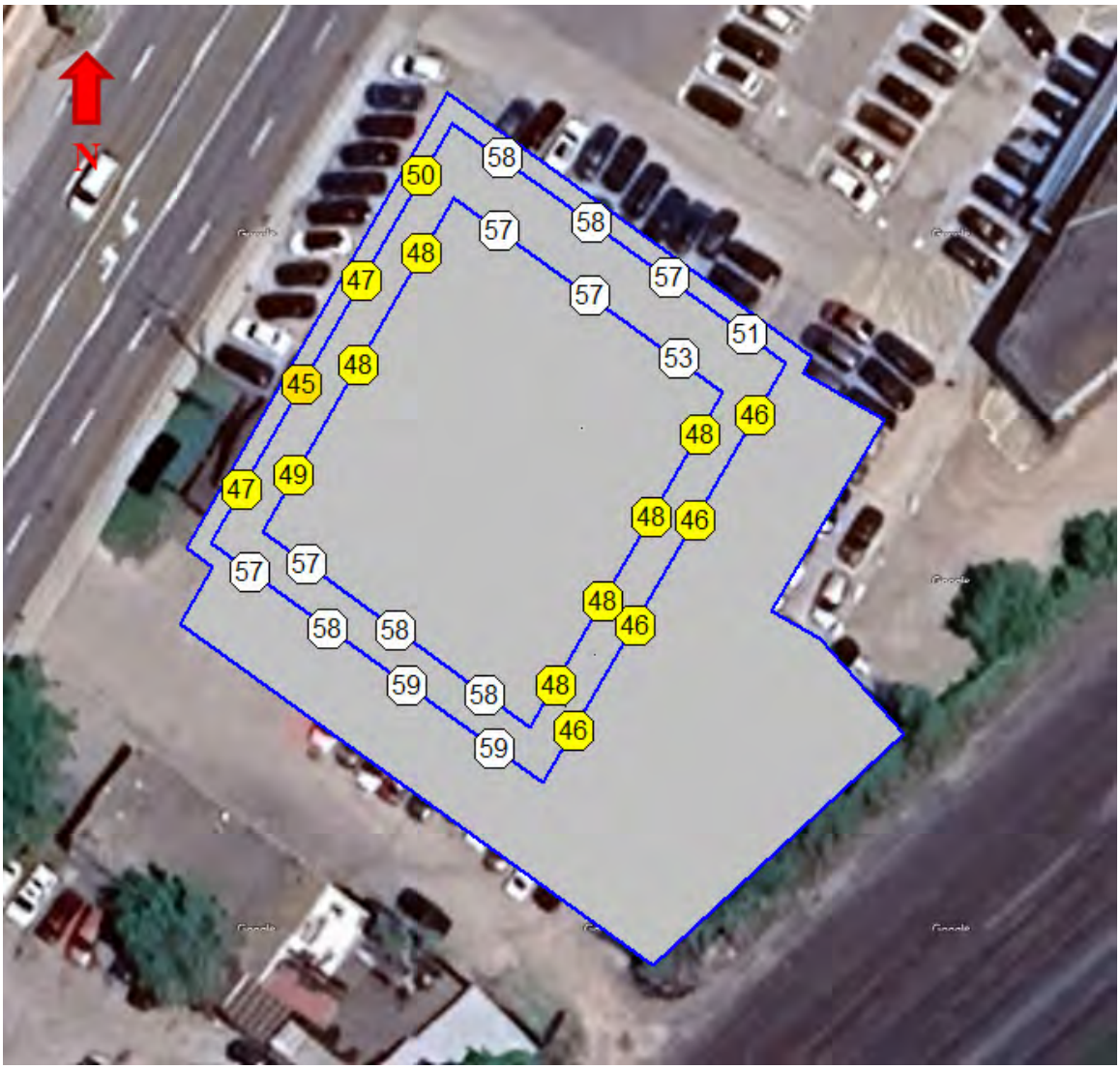


Figure 12: Daytime Steady Sound Levels, L_{EQ} [dBA]

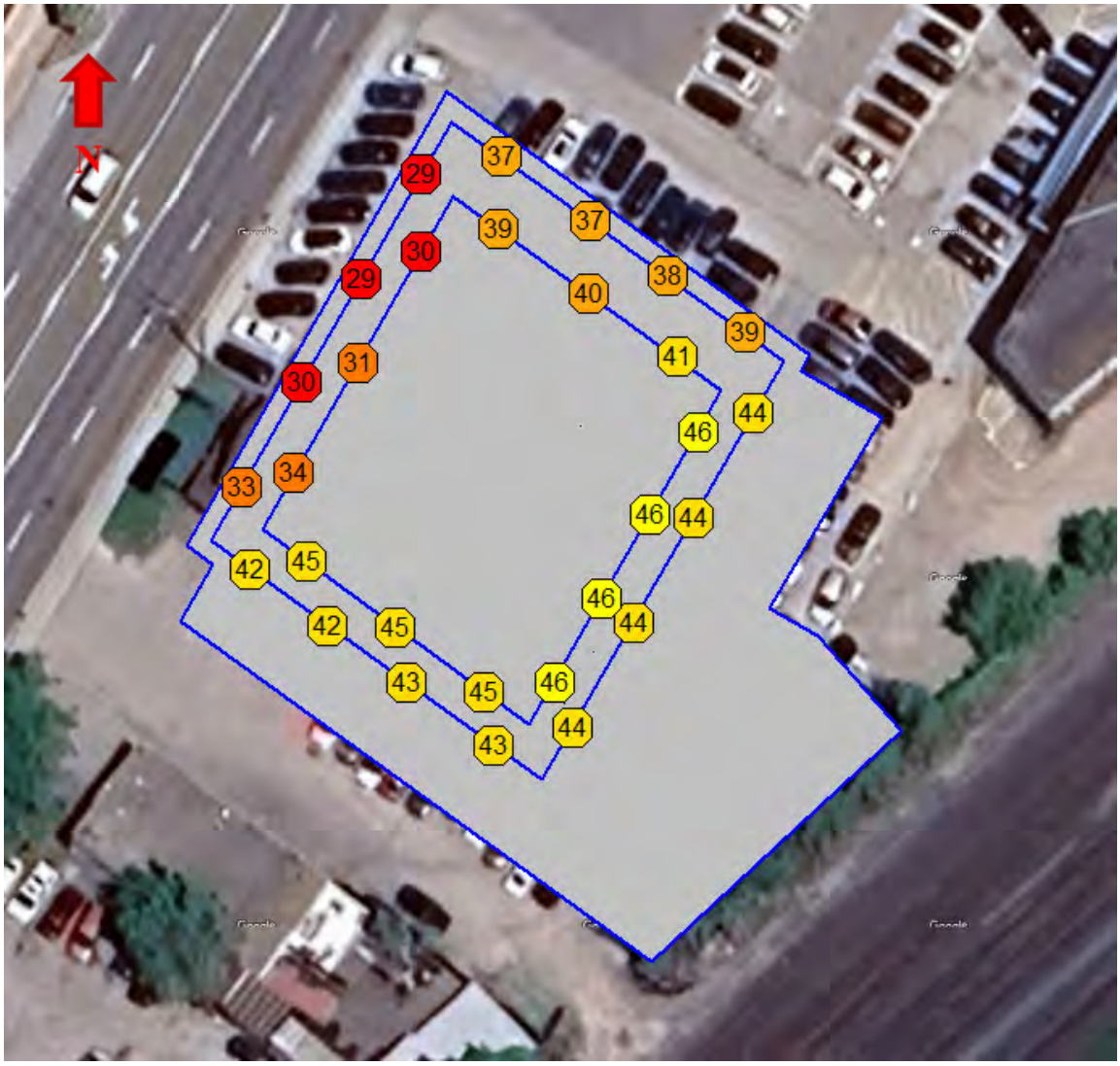


Figure 13: Nighttime Steady Sound Levels, L_{EQ} [dBA]

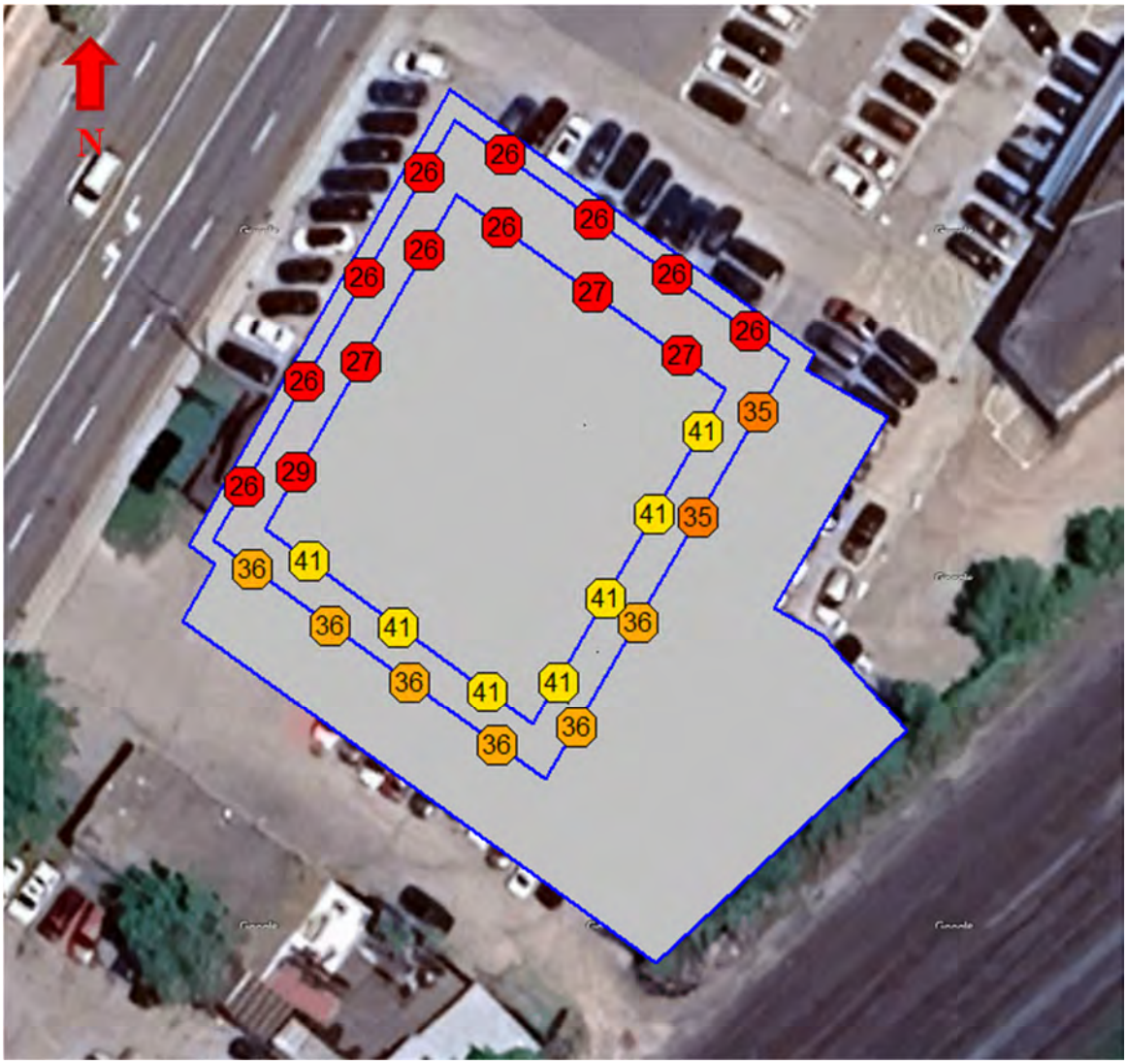


Figure 14: Impulsive Daytime Sound Levels from Sun Chemical Ltd., LLM [dBAI]

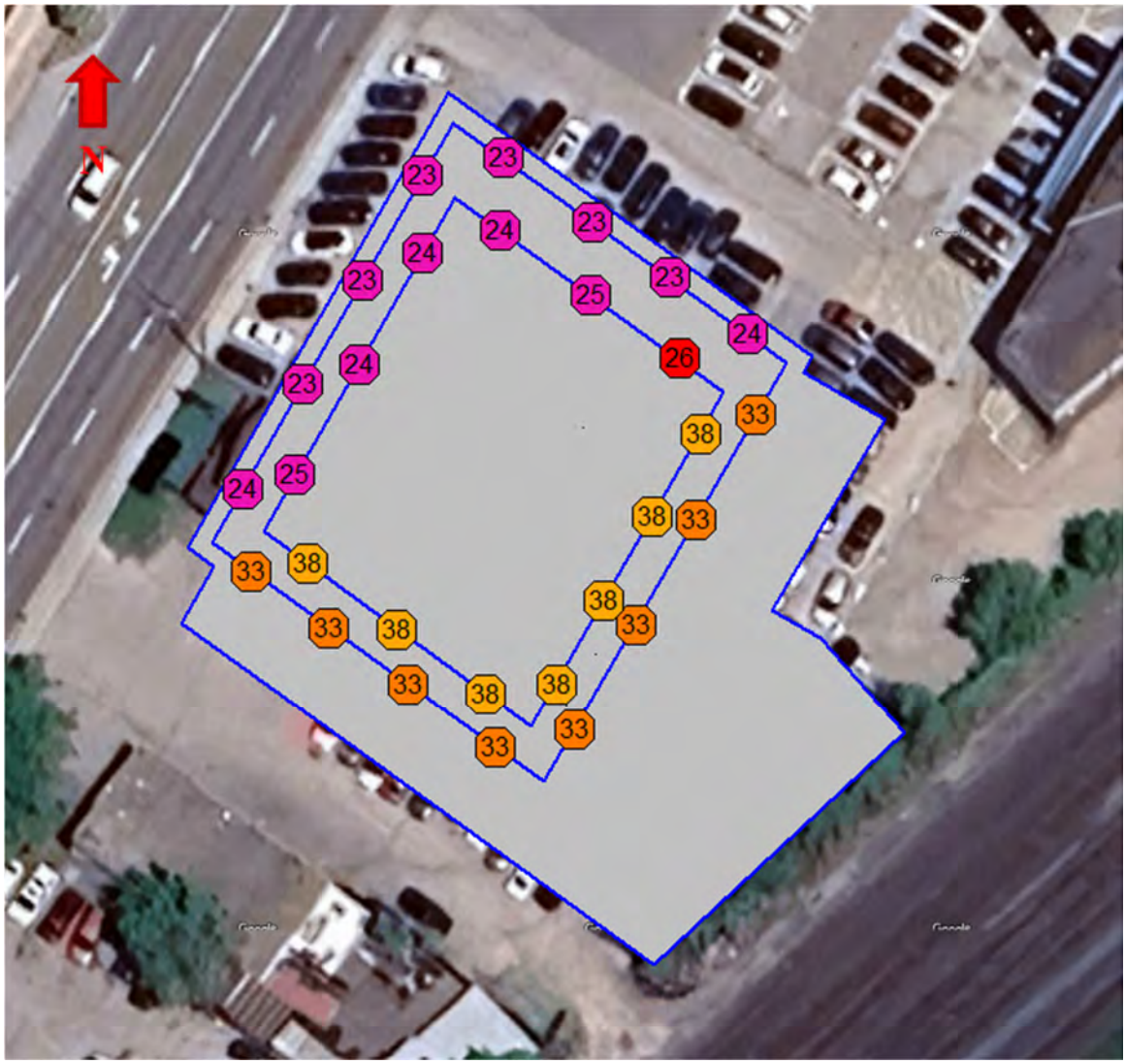


Figure 15: Impulsive Daytime Sound Levels from Ashland Chemicals, LLM [dBAI]

Appendix A:

Rail Guidelines

Metrolinx Adjacent Development Guidelines GO Transit Heavy Rail Corridors

Third Party Projects Review (TPPR)

Version 6.0 – June 2023

METROLINX

PREAMBLE

This document is an interim update to the original Metrolinx *Adjacent Development Guidelines* (dated April 2013) and presents an overview of current Metrolinx practices in this context. It is acknowledged that further revisions will be required to reflect content that will be presented in the forthcoming update to the RAC/FCM *Guidelines for New Development in Proximity to Railway Operations* (expected in late 2023) as well as other modifications to Metrolinx policies and practices, related to the RAC/FCM update and otherwise. As such, it is anticipated that another update to the *Adjacent Development Guidelines* will be released in early 2024. Until that time, please refer to the present document and contact the Metrolinx Third Party Projects Review team (development.coordinator@metrolinx.com) with any comments or questions in this regard.

Table of Contents

Definitions & Abbreviations 1
1.0 Introduction 2
2.0 Planning Context 3
3.0 Using These Guidelines 4
3.1 Scope of Use 4
3.2 Basis of Interest in Adjacent Development 4
3.3 Type of Adjacent Development Considered 5
4.0 Project Review Process 7
4.1 Overview 7
4.2 Stage 1: Pre-Application Engagement 7
4.3 Stage 2: Municipal Planning Review 8
4.4 Stage 3: Pre-Construction Technical Review and Work Permit Issuance 9
4.4.1 Technical Review Process 9
4.4.2 Work Permit Issuance 10
4.4.3 Field Oversight 11
4.5 Stage 4: Project Close-Out 11
5.0 Project Design Considerations 12
5.1 Rail Safety Measures – Setbacks and Safety Barriers 12
5.1.1 Building Setbacks 13
5.1.2 Safety Barriers 15
5.1.2.1 Earthen Berms 15
5.1.2.2 Deflection or Crash Walls 15
5.1.2.3 Safety Barrier Alternatives 16
5.1.2.4 Rail Safety and Risk Mitigation Study 16
5.2 Other Project Design Considerations 17
5.2.1 Anti-Trespassing Measures 17
5.2.2 Vegetation Requirements 18
5.3 Technical Studies and Reports 18
5.3.1 Noise and Vibration 18
5.3.2 Drainage and Storm Water Management 19
5.3.3 Air Quality 19
5.3.4 Microclimate 19
5.3.5 Traffic Management 20
5.3.6 Structural/Geotechnical 20

6.0 Project Administrative Considerations....21
6.1 Warning Clauses....21
6.2 Development Agreements....22
6.2.1 Adjacent Development Agreement....22
6.2.2 Other Agreements....22
7.0 Rail Corridor Construction Considerations....24
7.1 Typical Development Construction Activities....24
7.1.1 Excavations, Shoring, and Tie-Back Installation....24
7.1.2 Crane Usage....25
7.2 Construction Management....26
7.2.1 Pre/Post-Construction Condition Survey....26
7.2.2 Construction Management Plan....26
7.2.3 Demolition Work Plan....27
Appendix A – AECOM Submission Guidelines for Crash Walls
Appendix B – Metrolinx Shoring Monitoring Alert Level Exceedance Protocol/Procedure

Definitions & Abbreviations

"**As-Built Drawings**" has the meaning given by the Professional Engineers of Ontario as those drawings prepared and sealed by the reviewing engineer after verifying in detail the actual conditions of the completed Project.

"**Authority Having Jurisdiction**" means any federal, provincial, territorial, regional, municipal, or local governmental authority, quasi-governmental authority, or other agency having legal jurisdiction and that has or performs legislative, judicial, regulatory, administrative, or other functions within its jurisdiction.

"**Developer**" means owners of development and infrastructure Projects adjacent to the Rail Corridor lands. Any landowner who plans work adjacent to the Rail Corridor lands is also considered a Developer in this guideline. A proponent as defined in Bill 171 (as in the Consolidated Hearings Act), is also a Developer in this guideline.

"**Developer Infrastructure**" means all permanent infrastructure constructed by the Developer.

"**Metrolinx Asset Protection Package Guideline**" or **"MAPP"** is a Metrolinx document that governs Metrolinx led Transit-Oriented Communities (TOC) projects.

"**Metrolinx Infrastructure**" means all temporary and/or permanent infrastructure owned by or to be owned by Metrolinx and forms part of Metrolinx transit facilities, e.g., tracks, stations and elevated structures.

"**Metrolinx Standards Deviation Process**" is a review process developed by the Metrolinx Engineering team to review and approve, based on a risk assessment, any design proposals that deviate from established Metrolinx design standards.

"**Project**" means, collectively, Developer Infrastructure and any Third Party infrastructure included in the development.

"**Rail Corridor**" means Metrolinx owned property for the exclusive operation, maintenance, and construction of Metrolinx railway services – in this case pertaining to GO Transit.

"Sensitive Use" is any land use that is located immediately adjacent to a Metrolinx Rail Corridor and which is occupied for the better part of a day – including residential, commercial, industrial, institutional and intensively used grounds (programmed parks and other places of assembly).

"**Transit Oriented Communities**" or "**TOC**" is a Metrolinx team that pursues higher density, mixed-use development Projects that are connected, next to or within a short walk of transit stations and stops. The TOC approach goes beyond the traditional Transit Oriented Development (TOD) model, which typically concentrates on a single development.

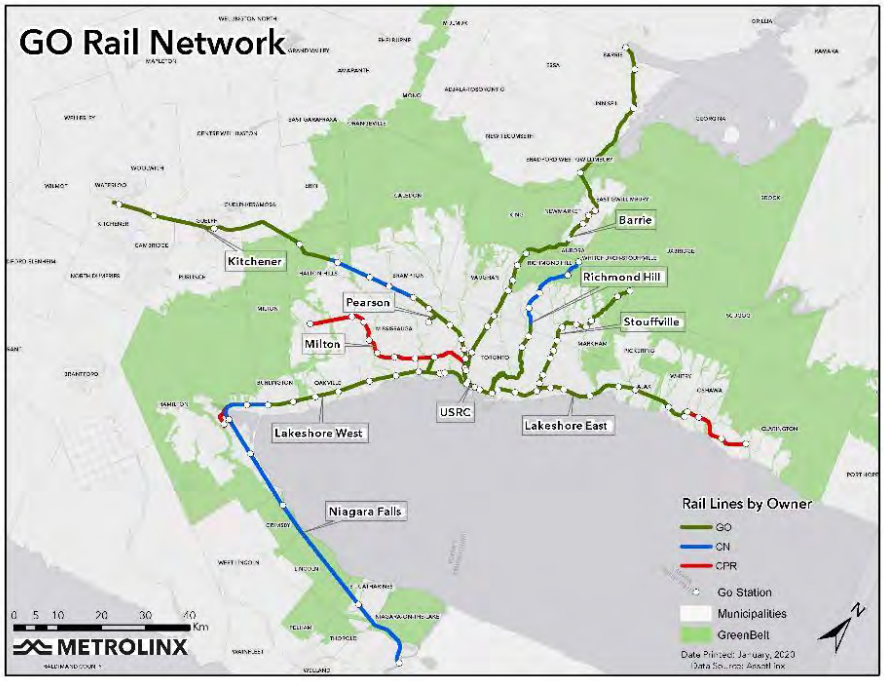
"Track Zone of Influence" means the zone in the ground in which any intrusion from Developer Infrastructure will impact Metrolinx Infrastructure, as described in section 7.1.1.

"**Works**" means the activities associated with provision of the Developer Infrastructure and Third Party infrastructure required in connection with the Project.

1.0 Introduction

Metrolinx owns, operates, and maintains a heavy Rail Corridor network that is utilized by GO Transit and UP Express services and which connect diverse communities across the Greater Toronto and Hamilton Area (GTHA), helping people to get where they need to go in a timely and convenient manner. To ensure that safe and efficient transit infrastructure and operations are maintained both now and into the future, as well as to contribute to the growth of strong and healthy communities, coordination and collaboration of planning and development activities along these transit corridors is of vital importance.

Metrolinx has an established history of reviewing and commenting on applications for development sites along its respective corridors and has adopted a set of standards and "best practices" intended to enhance safety and compatibility between railway operations and adjacent development activities.



The Metrolinx Third Party Projects Review (TPPR) team was established to oversee the development review process and is the first point of contact for proponents seeking to pursue development projects within the 300-metre zone- of-influence around any Metrolinx-owned corridor. TPPR provides direct support to the planning and development community to ensure that Project plans and construction activities incorporate appropriate requirements, do not unduly impact safety, and suitably consider/protect the integrity of both existing and future transit infrastructure and operations.

The purpose of these guidelines is to communicate relevant information to parties interested in undertaking development Projects within Metrolinx's Rail Corridor zone-of-influence. The document identifies key considerations from Project initiation through to construction.

Metrolinx is committed to providing advice and support to proponents planning development activities that interface with Metrolinx managed railway corridors, and we encourage engagement with Metrolinx early in the planning process to discuss how these guidelines may be applicable and, ultimately, to contribute to seamless Project delivery.

2.0 Planning Context

The responsibility for land use planning in Ontario is shared between the Province and municipalities. The Province sets the ground rules and directions for land use planning through the *Provincial Policy Statement* (PPS) and the *Planning Act*. The 2020 *Provincial Policy Statement* provides policy direction on matters of Provincial interest related to land use planning and development and sets the policy foundation for regulating the development and use of land. The policies aim to strike a balance between providing for appropriate development and protection of resources of provincial interest, public health and safety, and the quality of the natural and built environment. Altogether the intent is to contribute to a more effective and efficient land use planning system. Several policies in the PPS (specifically 1.2.6.1, 1.6.8.3 and 1.6.9.1) are particularly relevant in the context of the Metrolinx Adjacent Development Guidelines as they aim to enhance compatibility and mitigate impacts between rail facilities and Sensitive Uses.

Pursuant to the Ontario *Planning Act* and Regulations 543/06, 545/06 and 544/06, municipalities must notify railway operators – through the development application circulation process - of proposed Official Plan Amendments, Zoning By-law Amendments, Plans of Subdivision and Vacant Land Condominiums that are within 300 metres of a Rail Corridor. Municipalities also circulate minor variance and consent applications to Metrolinx pursuant to prescribed notification requirements, as well as site plan applications for sites that are in close proximity to Rail Corridors.

Municipalities implement the Province's land use planning policy framework through official plans and make land use planning decisions to achieve their communities' economic, social and environmental objectives, while remaining consistent with Provincial policy direction.

Development Projects located adjacent to Rail Corridors entail a unique set of considerations, and municipalities engage with rail operators through the planning process to ensure relevant requirements are satisfied. The *Guidelines for New Development in Proximity to Railway Operations*, prepared in 2013 as a joint effort between the Railway Association of Canada (RAC) and the Federation of Canadian Municipalities (FCM), has become a key reference document to support the municipal review of adjacent development matters. This document defines a standard set of mitigation measures specifically for new residential development along railway corridors, and also identifies conflict resolution strategies for use when issues arise during the development approval process. Some jurisdictions have further leveraged this material to develop their own customized approach to rail safety issues. The City of Toronto, for example, has taken a particular interest in this subject, first engaging IBI Group in 2019 to prepare a *Development in Proximity to Rail Operations* land use study and then implementing a Zoning By-Law Amendment (#536) to require submission of a Rail Safety and Risk Mitigation Report for development Projects within the area of influence of a railway corridor.

Rail operators like Metrolinx participate in the planning process and can appeal, pursuant to the Planning Act, any potential land use and/or design incompatibility issue to the Ontario Lands Tribunal (or OLT, formerly the Local Planning Appeal Tribunal (LPAT)). They do not have jurisdiction over land use decisions, however. Ultimately, it is the Authority Having Jurisdiction (typically the municipality or OLT) that holds the land use approval authority and as such must ensure that issues of rail safety and liability (among others) are suitably addressed.

3.0 Using These Guidelines

3.1 Scope of Use

The information presented in these guidelines is intended to inform and influence municipal land development planning and approval processes and provide a framework for land use decisions made in proximity to Metrolinx owned and operated railway corridors. The content will be of interest to any party engaged with planning and development activities for lands within 300 metres of Metrolinx heavy rail (GO Transit) corridors, including Developers, consultants, contractors, landowners, and municipal staff. Note that separate Metrolinx guideline documents are also available for Projects located adjacent to Light Rail Transit (LRT) and Subway/Priority Transit Project corridors.

These guidelines should be referenced in the conceptual stage of any development Project and frequently reviewed throughout the development process (planning, design, construction). The standards, practices and process referenced in this document have been refined through years of technical analyses and operational experience. In addition, the content presented herein is also consistent with and, in some cases, builds upon the RAC/FCM *Guidelines for New Development in Proximity to Railway Operations*, with additional information provided to reflect circumstances specific to Metrolinx.

It is acknowledged that past planning decisions and administrative practices have resulted in a multitude of development circumstances on properties adjacent to Metrolinx railway corridors, some of which are not consistent with the practices set out in this document. These guidelines are to be used to inform modern planning activities such that new development incorporates the measures identified herein; conditions on properties adjacent to development sites should not be referenced as justification for action in the present.

In any event, it should be noted that, while these guidelines aim to reflect established 'industry practice,' Metrolinx is aware of the need for, and committed to delivering, a flexible review process that reflects the specific parameters of a given development site. As such the information set out these guidelines should therefore be considered as a starting point for the development review discussion. Additional feedback and support will be provided by Metrolinx staff throughout the process.

Many of the practices noted herein have also been implemented by other rail operators such as Canadian National (CN) and Canadian Pacific (CP) Railways. While Metrolinx reviews applications along corridors owned by CN or CP where Metrolinx passenger train service operates, the corridor owners are the primary commenting agencies for those lines and development-oriented feedback must be obtained directly from those entities.

3.2 Basis of Interest in Adjacent Development

As established through Provincial policy documents, any new development within close proximity to GO Transit heavy Rail Corridors - whether it be adjacent, physically connected, or built within the air space above - is of interest to Metrolinx. Key considerations in this context include:

- Safety – ensuring, through appropriate design, mitigation, buffering and/or separation of uses, and construction management, that rail personnel, transit passengers, and occupants of adjacent buildings are suitably protected against adverse impacts

- Asset Protection – protecting existing infrastructure/operations as well as future transit expansion plans in concert with land use planning and development activities
- Sustainability - enhancing connections between transit services and surrounding communities (otherwise referred to as Transit Oriented Development)

3.3 Type of Adjacent Development Considered

These guidelines are primarily focused on development within the 300-metre zone of influence and particularly those Projects that are immediately adjacent to GO Transit Rail Corridors. This development may take a variety of forms - from a major high density multi-use Project to infill re-development of a single residential lot.

Transit-Oriented Development (TOD) can involve development adjacent to the Rail Corridor and may also be comprised of an entrance connection, be integrated with an existing GO Station, or constructed jointly with a new GO Station to promote enhanced access to transit services. Given the direct involvement of Metrolinx interests, the developments will be considered as a commercial transaction and managed in consultation with the Metrolinx Transit-Oriented Communities (TOC) group. Development components physically connected to transit infrastructure (e.g., station entrance building, pedestrian tunnel connection, etc.), shall proceed through a Metrolinx Asset Protection Package (MAPP) process. That being said, TOD Project teams should make reference to these guidelines and incorporate key considerations as appropriate.

Overbuild Projects may involve development beside the corridor but also include building components that extend fully or partially into the airspace over a Metrolinx Rail Corridor. These developments may or may not be physically connected to other transit infrastructure (e.g., station entrance building). They are subject to certain requirements that will vary depending on their physical characteristics and which are detailed in the Metrolinx Overbuild Development Guidelines.

The various types of adjacent development are illustrated in Figure 3.1.

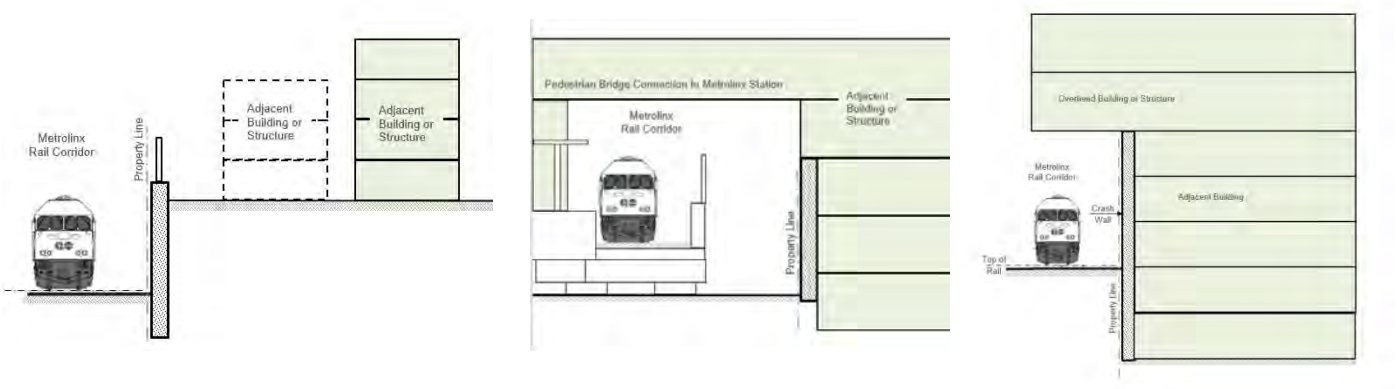


Figure 3.1 Types of Adjacent Development – Typical, TOD/TOC, and Overbuild (left to right)

While the form of development is an important consideration, specific rail-oriented requirements are assessed on the basis of the proposed land use(s) contemplated for a given Project – and more specifically, on the 'sensitivity' of those uses in relation to rail oriented impacts. 'Sensitivity' is assessed largely on the level of

occupancy associated with the land use in question. In the past 'Sensitive Uses' were limited primarily to residential-oriented Projects, given the potential for extended occupancy as well as ownership interests. Today, the list of Sensitive Uses has expanded significantly to include any use where there is occupancy for the better part of a day – including commercial, industrial and institutional uses. Non-Sensitive (low occupancy) Uses typically involve passively used spaces with no programmed activities and, given their characteristics, the list of rail-oriented requirements for such Projects is significantly reduced.

4.0 Project Review Process

4.1 Overview

The Metrolinx Third Party Projects Review team is engaged with the review of adjacent development Projects from early concept development through to construction. Key components of the Project review process are identified in the flow diagram below (Figure 4.1).

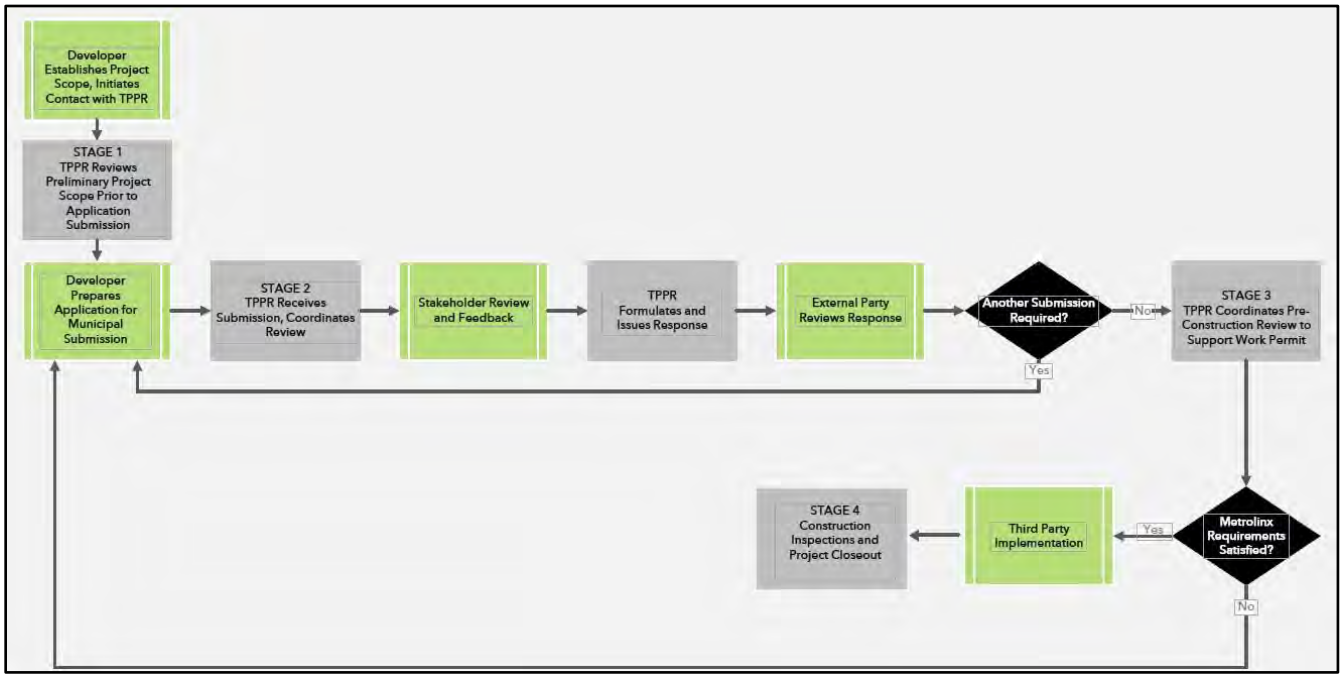


Figure 4.1: Metrolinx TPPR Project Review Process Flow Diagram

4.2 Stage 1: Pre-Application Engagement

Early engagement between the development Project team and TPPR is strongly recommended prior to municipal development application submission, particularly for those Projects that are immediately adjacent to GO Rail Corridors. The intent is to identify, and ideally address, rail-oriented concerns so that the municipal review process becomes only an administrative matter. This is also an opportunity to look forward to identifying key considerations for Project construction, and to also consider potential TOC opportunities.

During the initial meeting(s) the development team must provide key Project plans and/or reports. TPPR will review Project specifics, provide an initial determination of issues to be addressed, and work with the development team to address technical issues. Proposed construction methodology will also be discussed, and key requirements reviewed. Engagement with key internal Metrolinx stakeholders and/or TPPR's Technical Advisor (TA) may be necessary, depending on the issues identified (refer to section 4.4.1).
The intent of this preliminary review is to ensure 'compatibility' between rail operations and the subject development – through the planning, construction, and on-going occupancy of the Project. It is the Developer's responsibility to demonstrate that any potential impacts will be adequately mitigated, to the

satisfaction of Metrolinx. Some of the key considerations for review during early engagement may include the following:

- Rail Safety measures (setbacks, safety barriers)
- Environmental mitigation (noise, vibration and other impact studies)
- Technical review requirements
- Rail Corridor encroachment and associated requirements (construction management, Rail Corridor Access parameters, flagging protection)
- Administrative matters – such as legal agreements, easements and warning clauses

A comprehensive overview of key considerations for development Project design is set out in section 5.0. Note that the specific factors considered for any given Project will vary and, as such, some of the measures that are identified may not apply.

Duration of the pre-application review phase will depend on the complexity of the issues considered and may vary between a single meeting to several months of technical discussion. Any fees associated with this consultation (e.g., associated with the TA's technical review) shall be the responsibility of the Developer.

4.3 Stage 2: Municipal Planning Review

Once the pre-application review is complete, the development team should have a level of comfort with Metrolinx requirements, and Project documentation will be modified to reflect those requirements as applicable, to an extent that plan submission may proceed as part of the municipal planning review process as mandated under the Planning Act (refer to section 2.0).

It is acknowledged that not every Project will be submitted for consideration under the pre-application review process. As such, more detailed review will be initiated upon package submission and more comprehensive plan revisions may ultimately be required. In order to ensure timely review, all materials identified as part of the complete application checklist should be included with the submission.

Under the municipal planning process, application materials will be circulated to Metrolinx for review. TPPR will review the Developer's application submission and perform a completeness check. If the package is found to be incomplete, TPPR will immediately request additional documentation as required. If the application is complete, TPPR will initiate the review with reference to the design considerations as outlined in section 5.0. Engagement of TPPR's TA may be necessary, depending on the issues identified (refer to section 4.4.1) and TPPR may also consult with internal stakeholders, for feedback on pertinent issues, including the following groups:

- Sponsor Office – provides direction on issues pertaining to GO Transit Service expansion plans.
- Interface Team / Delivery Teams / Capital Projects Group – provides direction to ensure that existing and planned GO Transit infrastructure projects are coordinated with and not adversely affected by adjacent development activities.
- Engineering – provides technical advice regarding rail infrastructure matters – including structures, track, and signals.
- Real Estate Management – provides direction on all property-related issues and is the primary business lead for utility crossing agreements, easements and other land transactions (e.g., sale of property) as required.

- Transit-Oriented Communities – provides direction on all property-related issues, specifically, higher density, mixed-use development that is connected, next to or within a short walk of transit stations and stops.
- Legal Services – facilitates the execution of all legal matters including new and amended development agreements, crossing agreements, temporary use agreements (e.g., crane swing or shoring agreements) and land transactions.
- Risk Management – provides direction for all liability and insurance requirements.

Once all relevant feedback is assembled, Metrolinx will provide comments to the municipality on the basis of the timelines prescribed through the application process. Sign-off on planning comments will be issued when Metrolinx is satisfied that all associated concerns are suitably addressed. Ultimate approval of the subject application is a function of the municipality having jurisdiction. This process may repeat several times (through Official Plan Amendment, Zoning Bylaw Amendment, Site Plan Control, for example) as applicable until all requisite approvals are granted.

Additional technical discussions and reviews may continue in parallel to the municipal planning review process as necessary. This can include consideration of administrative considerations such as warning clauses and legal agreements (refer to section 6.0), engineering design and construction methodologies (refer to section 7.0), and Work Permit requirements (refer to section 4.4.2) as applicable. It should be noted that certain arrangements, such as Rail Corridor access, have long lead times, so it is prudent to initiate such discussions early in the process.

It's important to note that some construction-oriented work, such as demolition to prepare the subject lands for re-development, may occur at an earlier stage in the process – including in tandem with the municipal planning review. In such cases, the technical review / Work Permit process set out under section 4.4 may apply, depending on the scope, method and/or location of the demolition work.

4.4 Stage 3: Pre-Construction Technical Review and Work Permit Issuance

Once the municipal planning review is complete, the Developer may choose to move forward with construction. Projects that are immediately adjacent to the Rail Corridor and that involve any level of encroachment into the Rail Corridor will be subject to further technical review and will conclude with execution of applicable agreements and issuance of a Metrolinx Work Permit. No construction within 10 metres (30 feet) of active rail may proceed without a Metrolinx Work Permit. Notwithstanding, it is recommended that proponents also confirm associated requirements with Metrolinx for work that is located outside of the 10-metre limit. Projects located within the 300-metre zone of influence but that are not immediately adjacent to the Rail Corridor may proceed as long as associated Metrolinx concerns (and other applicable planning approvals) are satisfied.

4.4.1 Technical Review Process

Project-related construction activities that are located within 10 metres of active rail and, depending on the nature of the proposed work, in close proximity to the Metrolinx Rail Corridor (as illustrated in Figure 4.2) will be subject to a Metrolinx Third Party technical review process that examines the detailed design and Work Plan for each of the proposed Works. The focus of the technical review is to confirm compliance with applicable requirements in order to mitigate, and ideally eliminate, any potential impacts on the Metrolinx Rail Corridor. The Developer shall be responsible for submission of all associated plans, reports and other materials required to support the subject review.

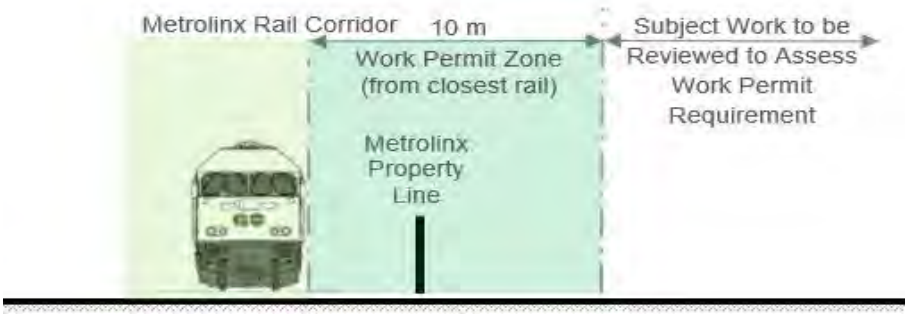


Figure 4.2: Metrolinx Rail Corridor Technical Review/Work Permit Zone of Influence

TPPR will oversee the technical review process and will engage internal stakeholders to review submissions and provide feedback as required. Subject matter that extends outside of internal expertise will require more advanced technical review by the Metrolinx Third Party TA. The TA will provide feedback to the Developer regarding technical considerations (including but not limited to the subject matter set out in section 7.1) within fifteen (15) business days per individual submission unless otherwise specified, and the review period will re-start with each subsequent revision. All fees associated with this process are the responsibility of the proponent and will be identified in a "Level of Effort" quote to be provided by the TA at commencement of the process. Receipt of payment must be confirmed prior to initiation of the review. The quote shall include the facilitation of access for work within the Metrolinx Rail Corridor, as well as ongoing coordination, support, and construction oversight in accordance with conditions set out in the Metrolinx Work Permit (refer to section 4.4.2).

The Technical Review will be conducted with reference to applicable policies, standards and protocols. The Technical Review must be fully completed prior to the issuance of a Work Permit. Where the subject Project proposes to physically integrate with public facing transit facilities, this guideline will not apply, and rather, the proponent shall engage with the Metrolinx TOC department and follow the Metrolinx Asset Protection Package (MAPP) process accordingly.

4.4.2 Work Permit Issuance

Upon successful completion of the technical review process as identified in section 4.4.1, TPPR, in consultation with their Third Party TA, shall determine if conditions have been satisfied to support Work Permit issuance. A Work Permit is a document that identifies proponent roles and responsibilities with respect to the subject work and allows the Developer to proceed with their construction, subject to satisfaction of certain conditions/obligations that are to be confirmed by TPPR's TA.

Beyond the technical review, the Work Permit shall not be issued until the Developer confirms satisfaction of other conditions including:

- ✓ Railway utility locates (Metrolinx and CN) have been obtained
- ✓ Railway flagging protection arrangements have been confirmed
- ✓ Rail Corridor Access parameters such as workblocks are understood/arrangements are confirmed
- ✓ Appropriate insurance has been obtained
- ✓ WSIB requirements have been satisfied
- ✓ Appropriate personnel have completed Personal Track Safety (PTS) training

Additional information regarding these matters is documented in the Work Permit and TPPR and their Third Party TA will provide advice and assistance as required. It should be noted that some of these requirements

(such as Rail Corridor Access permissions) have long lead times and it is prudent to initiate related discussions during the municipal planning review stage (refer to section 4.3).

Upon issuance of the Work Permit, the Developer and their contractors shall be obligated to satisfy all applicable requirements as set out in the document. The issuance of a Work Permit by Metrolinx does not exempt the Developer from other applicable codes, standards, by-laws, statutes, regulations, or any other conditions required by Metrolinx or other entities involved in the development review and approval process.

4.4.3 Field Oversight

During the construction of the development, TPPR staff and/or their Third Party TA may perform inspections of the Works to ensure general compliance with the approved Work Plan and the terms and conditions set out in the Work Permit. Other construction-related documentation, as identified in section 7.2, may also be referenced.

4.5 Stage 4: Project Close-Out

The Developer shall advise Metrolinx in writing once all engineering/field support, interface functions, and Project construction impacting Metrolinx is complete. Where the Project includes a permanent change/modification to Metrolinx Infrastructure, the Developer shall provide As-Built Drawings in AutoCAD or MicroStation and PDF formats, within 30 calendar days. Engineering Certificates of Completion (as identified in the Metrolinx Adjacent Development Agreement) may also be required depending on the circumstances.

5.0 Project Design Considerations

A comprehensive overview of key considerations for development Project planning is set out in the sections below. Note that the specific factors considered for any given Project will vary and, as such, some of the measures identified herein may not apply. As noted in section 3.1, it is acknowledged that flexibility is required during the review process given the unique characteristics of any given site. The information presented herein should therefore be regarded as a starting point, and each Project will be assessed on a case-by-case basis to determine the final package of requirements. Metrolinx staff will provide advice in this regard and will work with proponents to adjust requirements as appropriate. Any significant departure from established practice will be subject to the Metrolinx Standards Deviation Process.

It should be noted that Metrolinx is in the early stages of establishing a risk-based approach, particularly for the review of rail safety matters. It is anticipated that this process will be further refined in coordination with updates to the RAC/FCM *Guidelines for New Development in Proximity to Railway Operations*, and additional direction in this regard will be provided through an update to the *Adjacent Development Guidelines* in early 2024.

5.1 Rail Safety Measures – Setbacks and Safety Barriers

Setbacks and safety barriers are typically required for development located immediately adjacent to Rail Corridors but may also be relevant considerations for those sites that are not adjacent yet have exposure to the corridor (due to the presence of vacant intervening land, for example). As illustrated in Figure 5.1, established industry practice suggests a 30 metre setback in combination with a safety barrier (most basic form being a 2.5 metre high earthen berm) as the standard mitigation for 'Sensitive Uses' (occupied for the better part of a day – refer to section 3.3) including residential, commercial, industrial, institutional and programmed open space. It is acknowledged, however, that such measures may not be practical or even possible depending on the characteristics of the site plan. As such Metrolinx will evaluate these requirements on a case-by-case basis, together with the development team, to arrive at a rail safety package, to be detailed in the Rail Safety Report, that is deemed through analyses to be appropriate for the Project in question. The information set out in this section should therefore be regarded as a starting point for the review process.

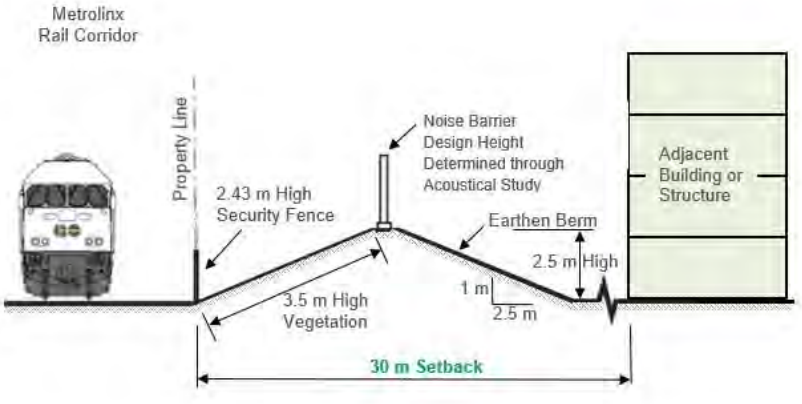


Figure 5.1: Typical Setback and Safety Barrier Requirements

When considering re-development proposals for existing buildings that are already non-compliant with respect to current Metrolinx rail safety standards, the existing rights will be deemed as acceptable for the new proposal as long as there is no additional setback encroachment and the proposed use is not modified. Further intensification beyond the established limits and/or a change of use shall not be permitted without the implementation of appropriate mitigation measures, however.

5.1.1 Building Setbacks

Building setback requirements are established to provide a buffer zone that contains the impacts associated with a potential train derailment; allows for fire separation; permits dissipation of rail-oriented noise, vibration, and emissions; provides for emergency and maintenance access; and accommodates a safety barrier. Setback distances vary by land use and occupancy status. The following provides an overview of typical building setback requirements by land use:

Residential, Commercial, Institutional, Industrial (high occupancy), Programmed Open Space: 30 metres

Industrial (low occupancy): 15 metres

Limited occupancy/passively used spaces (including parking garages, storage facilities, passive (non-programed) open space (incl. road rights-of-way and paths)): No setback required and are acceptable uses within the setback area of Sensitive Uses.

Key considerations regarding setbacks are set out below:

- The minimum building setback distance is measured from the mutual property line (i.e., between the Rail Corridor and the private property) to the building face where the Sensitive Use is located.

- The mutual property line may be redefined in cases where Rail Corridor expansion is required or there is intervening Metrolinx-owned land outside of the active Rail Corridor (such as a station building or parking lot); in such cases, the minimum setback distance would be measured from the 'adjusted' property line.

- In its most basic form, the setback is assumed to be measured as a straight-line horizontal distance. Where circumstances dictate (e.g., spatially constrained urban sites), the building setback distance may be measured as a combination of horizontal and vertical distances, as long as the horizontal and vertical values satisfy the total setback requirement in combination (refer to Figure 5.2). In this context, a minimum horizontal setback of up to five (5) metres is recommended to accommodate building maintenance requirements.

- The setback may be reduced depending on the characteristics of the safety barrier. For example, a minimum setback reduction in the order of five (5) metres is justified when a crash wall is to be constructed. An alternative setback configuration shall require a Rail Safety and Risk Assessment Study (refer to section 5.1.2.4).

- When the adjacent rail line is located in a cut measuring in the order of four (4) metres deep or greater, the height of the slope may be included as part of the building setback (measured from the toe of the slope – refer to Figure 5.3).

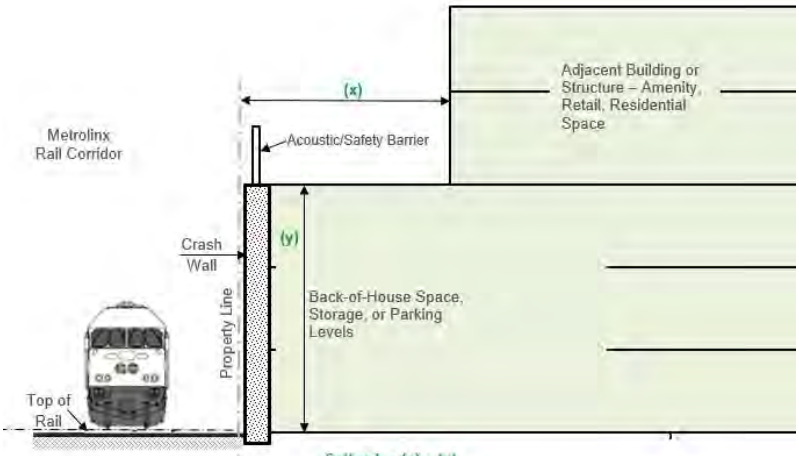


Figure 5.2: Horizontal/Vertical Setback with Crash Wall

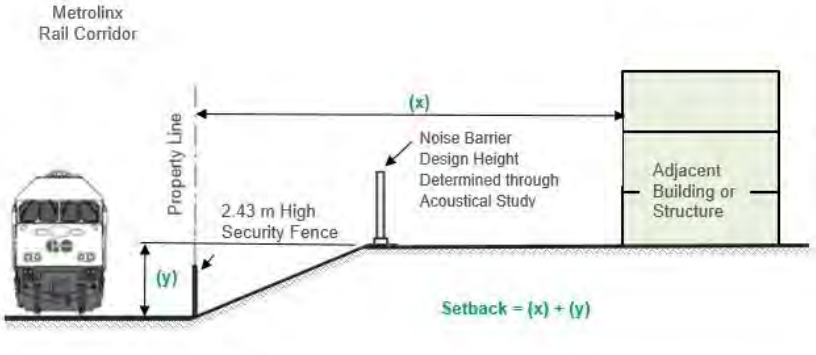


Figure 5.3: Setback when Tracks are in a Cut

- When the adjacent rail line is located on an elevated structure, the setback may be measured from the edge of the guideway and include the vertical height of the guideway (refer to Figure 5.4).

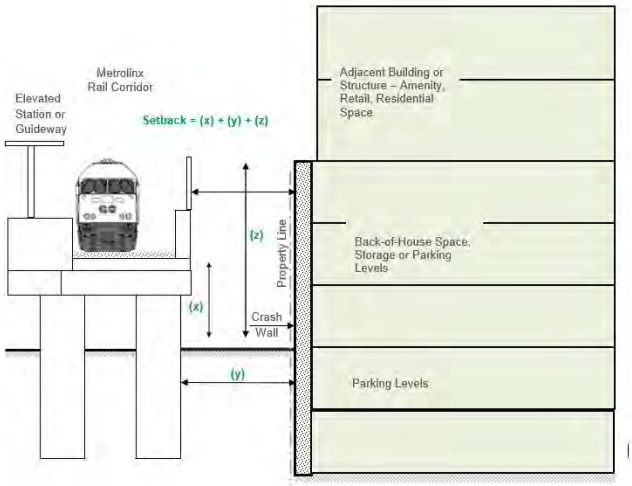


Figure 5.4: Setback Adjacent to Elevated Rail Corridor

5.1.2 Safety Barriers

Safety barriers are typically provided together with a building setback to absorb the impacts of a possible train derailment as well as to provide physical protection for adjacent properties. These barriers may take a number of forms, with selection of preferred approach based on the characteristics of the development site.

In the majority of cases the development sites, and their associated barriers, are located at the same or similar elevation as the Rail Corridor. For developments where the adjacent Rail Corridor is elevated above the mutual property line, an appropriate barrier will be required on the development lands, to be considered in combination with in-corridor measures such as guard rails (designed to reduce the severity of, but not eliminate the potential for, a train derailment). Additional engineering evaluation may be required to ensure that the selected barrier design will suitably accommodate the impact of a train derailment.

The following sections provide an overview of safety barrier configuration options and associated key considerations.

Note that low occupancy uses (such as parking, storage facilities, passive parks) do not typically require a safety barrier, but the proponent or area municipality may wish to provide such protection for insurance or other purposes.

5.1.2.1 Earthen Berms

- Earthen berms are comprised of highly compacted earthen materials, to be compacted to 95% modified proctor (in-situ dry unit weight of the material as a percentage of the known maximum dry unit weight of that material).
- The typical berm height is 2.5 metres for Sensitive Uses and 2.0 metres for low occupancy uses (e.g., industrial), constructed at a slope of 2.5:1 with a one (1) metre crest.
- Safety berms are required for lands within up to 120 metres from the railway corridor, with the required barrier height diminishing with distance and determined through calculation.
- Berms are to be located adjoining and parallel to the railway property line, entirely on the adjacent private property.
- Returns are to be provided at the ends of the berms, with placement subject to site specific conditions, such that buildings with direct exposure to the Rail Corridor are suitably protected.
- When the rail line is located in a cut measuring in the order of four (4) metres or deeper, the slope is deemed equivalent to an earthen berm and no supplemental modification is required.

A ditch (also referred to as an 'inverted berm') adjacent to the Rail Corridor may also be provide a level of protection equivalent to a standard berm – to be confirmed through an engineering review.

5.1.2.2 Deflection or Crash Walls

- A deflection or crash wall may be used as an alternative to an earthen berm for spatially constrained urban sites (as they generally occupy less space) and where a setback reduction would be beneficial.

- Crash wall specifications are set out in the *Submission Guidelines for Crash Walls* document prepared by AECOM (refer to Appendix A), which is regarded as the Metrolinx design standard for these structures.

- An alternate design configuration may be considered – such as structurally reinforced columns – if a solid wall is not desirable (e.g., in cases where pedestrian permeability is required).

- Where barriers are integrated into the building face, they must be structurally separated from the building to ensure that integrity is maintained in the event of a derailment.

- In cases where the subject development is not located immediately adjacent but has direct exposure to the Rail Corridor (due to the presence of vacant intervening lands, for example), an alternate barrier design approach may be considered – such as structural reinforcement within the building on the rail-facing frontage.

- Openings through the barrier structure (e.g., windows, passageways) may be considered subject to confirmation that the barrier integrity will not be compromised.

    - Barrier returns are to be provided, with placement subject to site specific conditions, such that buildings with direct exposure to the Rail Corridor are suitably protected.

- TPPR will provide Metrolinx-specific inputs (such as train speed) to support development of the barrier design.

- The proponent's engineer shall demonstrate through calculations that the subject deflection/crash wall will afford a level of protection and energy absorption as required by relevant standards and Metrolinx requirements and shall submit a Rail Safety and Risk Mitigation Study that includes key design details (refer to section 5.1.2.4). Such designs and studies shall be subject to review and approval by TPPR's Third Party TA (refer to section 4.4.1).

5.1.2.3 Safety Barrier Alternatives

Where the proponent proposes alternatives to the safety barriers outlined in sections 5.1.2.1 and 5.1.2.2, such as an earthen berm in combinations with a retaining wall, a deflection wall, or a crash wall that diverts from standard design approaches, the proponent's engineer shall demonstrate through calculations that the alternate safety barrier will afford a level of protection and energy absorption that is equivalent to that established by relevant standards and Metrolinx requirements, and shall submit a Rail Safety and Risk Mitigation Study that includes key design details (refer to section 5.1.2.4). Such designs and studies shall subject to review and approval by TPPR's Third Party TA (refer to section 4.4.1). Any significant departure from established practice/equivalency will be subject to the Metrolinx Standards Deviation Process.

5.1.2.4 Rail Safety and Risk Mitigation Study

Applicants with sites that are located immediately adjacent (or with direct exposure to) a Rail Corridor and where the proposed rail safety (setback and safety barrier) package entails a diversion away from the standard (e.g., 30 metre setback and a 2.5 metre high earthen berm) will be required to submit a Rail Safety and Risk Mitigation Report which details key components of their proposal. The intent is to demonstrate that the proposed measures will provide a level of protection for the site that is equivalent to or even exceeding that of the established industry standards. The report shall be subject to review and approval by TPPR's Third Party TA.

The Rail Safety and Mitigation Study shall, at a minimum, include the following components:

- Overview of the proposed development (including use(s) and floor plan details) and its relationship to the Rail Corridor
- Profile of existing and future rail operations in the adjacent corridor
- Assessment of all potential rail-oriented risks based on the development characteristics and corridor profile
- Identification of the proposed rail safety mitigation measures required to address the established risks – including detailed technical engineering information
- Documentation of other relevant rail-oriented considerations and associated actions.

5.2 Other Project Design Considerations

5.2.1 Anti-Trespassing Measures

Fencing is installed to define railway property and discourage trespassing onto the railway corridor. New fencing installations are required irrespective of the land use and occupancy status in any location where direct access to the Rail Corridor is afforded. The following sections provide an overview of key fencing (and other anti-trespassing) considerations.

- The current Metrolinx minimum fencing standard is a 2.4 metre high security/anti-trespass (non-cuttable/non-climbable) fence.

- Private fencing is to be installed at a distance of four (4) inches (pending confirmation of suitability based on locates) from the property line to ensure all associated material is located on private property.

- All costs for fencing associated with new developments, including on-going maintenance, are to be paid by the property Developer.

- Noise barriers and crash barriers are acceptable substitutes for standard fencing installations, although additional standard fencing may be required in any location with direct exposure to the Rail Corridor.

- If the selected fencing is comprised of a solid surface, Metrolinx requires an anti-graffiti silicone coating be applied to the railway side of the barrier to discourage and manage graffiti. Developers are also encouraged to use visually appealing landscaping/planting (such as vines) to prevent direct access to the barrier face.

- Developer Infrastructure facing or located adjacent to the Rail Corridor shall be designed to prevent trespassing activity and other encroachments. Adjacent property owners shall:

- Maintain landscaping within the limits of private property and not encroach beyond the mutual property line.

- Not be permitted to access the Rail Corridor to maintain the private development without sufficient approvals.

- Design buildings such that balconies do not provide direct access to the Rail Corridor – including installation of screening where required/appropriate.

- Municipal planning activities should consider the nature of land uses on opposite sides of the Rail Corridor in an effort to discourage the creation of new pedestrian desire lines – and hence, trespassing. In situations where pedestrian desire lines become apparent and standard fencing is not sufficient to discourage trespassing, more robust barriers should be considered. Alternate formal (grade separated) connections may also be pursued to ensure that safe conditions are maintained, rail activity is not interrupted, and transit services are easily accessible.

5.2.2 Vegetation Requirements

A 3.5 metre low-vegetation buffer has been established as part of the Metrolinx GO Expansion program (specifically relating to electrification infrastructure clearances). The buffer is measured from the mutual property line. Only low-lying vegetation, such as shrubs and grasses, are permitted in this area. Proponents will be required to submit a final Landscaping Plan identifying planting details for review and satisfaction of Metrolinx.

5.3 Technical Studies and Reports

Technical studies and reports may be required depending on the characteristics of the subject Project as well as its location in relation to Metrolinx Infrastructure. An overview of typical subject matter is set out below. Some studies may be subject to review and approval by TPPR's Third Party TA (refer to section 4.4.1) depending on the subject matter.

5.3.1 Noise and Vibration

Noise and vibration studies may be required to ensure, through an analysis of the surrounding environment, that suitable measures are introduced to mitigate rail-oriented noise and vibration impacts. Noise and vibration study requirements vary by land use and occupancy status. Key considerations for noise and vibration studies are set out below.

- Noise standards are to be applied to residential development within 300 metres of the Rail Corridor.

- Acoustical analysis is required for other non-residential uses where there may be sensitivity to noise (e.g., day care centres, offices with sensitive equipment etc.).

- Noise attenuation or noise barriers may be required for Projects (primarily residential) that include outdoor amenity areas. These barriers shall be located adjacent and parallel to the rail corridor, shall be designed in accordance to required studies and assessments, and shall include barrier-returns at the ends as required. Opportunities to replicate the noise attenuation function through use of other barrier formats (e.g., crash wall, Metrolinx noise barrier) can be explored. The noise barriers may also suitably provide for an anti-trespassing function.

- Other mitigation measures (e.g., provision of air conditioning, enhanced windows and/or building materials, etc.) to be incorporated as part of the development may also be recommended by a qualified acoustical consultant.

- Trees and standard fencing are not acceptable substitutes for noise barriers.

- Warning Clauses are mandatory for residential units within 300 metres of the Rail Corridor and may suitably address noise concerns for some (non-residential) forms of development. Refer to section 6.1 for additional information in this regard.

- Special considerations may apply at locations (such as the Union Station Rail Corridor) where trains are stored, operate at reduced speed/idle and/or where unique operating characteristics (e.g., use of snow blowers, specialized machinery, etc.) are common.

- A comprehensive acoustical review will be required for development within 300 metres of major Metrolinx rail maintenance facilities – including Willowbrook and Whitby. These facilities are integral for the current and future operations of the Metrolinx heavy rail network and involve unique operating characteristics and associated noise that may be generated 24 hours a day, seven days a week. The study shall include a detailed analysis of the facility operations to ensure appropriate mitigation measures are incorporated into the final development design.

- TPPR shall provide forecast rail traffic volumes, speed and other operational information to support the completion of the noise study.

- Vibration standards are to be applied to development within 75 metres of the Rail Corridor and measured at the location of the closest Sensitive Use area.

- Appropriate isolation measures will be required where vibration levels exceed the established standards.

5.3.2 Drainage and Storm Water Management

Any proposed alterations to the existing Rail Corridor drainage pattern (i.e., into and/or out of) must be substantiated by a drainage report completed by a qualified Engineer that demonstrates that the Rail Corridor will not be adversely impacted. This report may be reviewed by TPPR's TA.

Any development-related changes to drainage patterns should ideally be addressed using infrastructure and/or other means located entirely within the development lands. Coordination with Metrolinx to make use of existing Rail Corridor infrastructure (e.g., ditches, culverts) may be considered if the impact is demonstrated to be minor and will be subject to Metrolinx review/approval.

5.3.3 Air Quality

Where the Developer's Project is located adjacent to the Rail Corridor (and particularly when in close proximity to busy locations such as the Union Station Rail Corridor) an assessment will be required to demonstrate that indoor air quality conditions can be maintained at acceptable levels. Appropriate mitigation measures (such as air intake filters, for example) must be identified as required to achieve such conditions. The air quality study may include an emission dispersion analysis depending on the characteristics of the location (e.g., if in close proximity to a station platform or tunnel).

5.3.4 Microclimate

Where the development Project may create localized changes to microclimate that have the potential to negatively impact Metrolinx operations and/or infrastructure, a microclimate study shall be submitted to identify impacts and associated mitigation measures related to wind, snow accumulation, and solar exposure.

5.3.5 Traffic Management

Where the development is located in close proximity to Metrolinx Infrastructure such as a station and/or parking lot, a traffic management study shall be provided which identifies temporary and permanent access considerations for vehicles and pedestrians as applicable. The study shall also consider emergency response access requirements. At-grade rail crossings within the vicinity of the proposed development shall also be identified as part of the analysis. The impact of the new development on pedestrian, cycling and vehicle volumes at the crossings should be identified and assessed, with mitigation measures identified as required and submitted for review as part of the application.

5.3.6 Structural/Geotechnical

Where the development construction has the potential to temporarily or permanently affect loading conditions on Metrolinx Infrastructure, a structural and geotechnical engineering report shall be submitted, to be prepared and stamped by a Professional Engineer, that demonstrates that any imposed loading is mitigated to the extent that there will be no impact to the Metrolinx Infrastructure.

6.0 Project Administrative Considerations

6.1 Warning Clauses

Warning Clauses, which are typically identified as mitigative measures within the subject Noise and Vibration Study, are intended to advise new or prospective property owners/occupants of the potential adverse impacts resulting from the adjacent railway operations.

The applicable Warning Clause(s) are to be inserted in all Development Agreements, Offers to Purchase, and Agreements of Purchase and Sale or Lease for any new residential dwelling unit or commercial office building within 300 metres of the railway corridor (as well as for any other non-residential development Projects where noise-related issues are identified). Selection of the appropriate warning clause will depend on the location of the development and the nature of the Rail Corridor operations. Examples of typical Metrolinx Warning Clauses are set out below. Other customized Warning Clauses may be applied depending on prevailing circumstances.

Metrolinx Rail Corridor – General
Warning: Metrolinx and its assigns and successors in interest has or have a right-of-way within 300 metres from the subject land. 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.

Metrolinx Rail Corridor – Within Union Station Rail Corridor
Warning: Metrolinx owns and operates the Union Station Railway Corridor (the "USRC"), the busiest rail corridor in Canada, that is located within 300 metres from the subject land. Rail corridor or other transit operations occur on a continuous basis, 24 hours a day every day of the year. Said operations include: the operation and idling of diesel locomotives that generate diesel fumes and odours; artificial lighting of the USRC may illuminate the sky; the loading, unloading and switching of passenger rail cars; and the operation of various processes for the maintenance of rail and other transit equipment. Noise and vibration originating from a number of different sources, including normal train movements (including bells and whistles), train idling, rail corridor construction, and snow removal (including switch blowers) activities will emanate from the USRC.

Metrolinx Willowbrook Rail Maintenance Facility
Warning: Metrolinx and its assigns and successors in interest has or have a right-of-way and an interest in land within 300 metres from the subject land. There may be alterations to or expansions of the rail or other transit facilities on such right-of-way and/or to the Willowbrook Rail Maintenance Facility in the future including the possibility that Metrolinx or any railway entering into an agreement with Metrolinx to use the right-of-way and/or Willowbrook Rail Maintenance Facility 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.

6.2 Development Agreements

Depending on the Project circumstances, development agreements may be required to specify requirements, roles and responsibilities. These agreements must make reference to final Project plans (with content depending on the nature of the agreement) and, as such, finalization of these documents usually occurs in the latter stages of the Project planning process. Metrolinx has developed and refined (based on Subject Matter Expert feedback) template agreements that can be provided to the Project team for reference in the early stages of engagement. Review and refinement of associated details can begin at any time, although it should be noted that modifications to the standard templates are discouraged.

6.2.1 Adjacent Development Agreement

In cases where a new development is located immediately adjacent to a railway corridor, the property owner will be required to enter into an Adjacent Development Agreement stipulating how Metrolinx interests will be protected throughout the lifetime of the Project (from construction start to on-going building occupation). A key focus for these documents is ensuring that the applicable safety and impact mitigation measures are suitably provided and maintained. The Adjacent Development Agreement also includes an Easement for Operational Emissions, to be registered on title over all associated development property within 300 metres of the Rail Corridor. In the event that the subject property is not located immediately adjacent to the Rail Corridor, the easement can be registered through the use of an abbreviated agreement document.

6.2.2 Other Agreements

Additional agreements may be necessary on a short-term (e.g., during construction) or on an ongoing basis depending on the Project requirements and characteristics. Examples of such agreements are set out below. Other customized agreements may be required depending on the Project parameters.

- Non-Disclosure Agreement – used when the development team requires access to sensitive and confidential Metrolinx information such as plans and reports to inform their own Project planning and design activities.

- Infill Development Agreement – employed for infill development Projects of four (4) units or less. While integration of appropriate mitigation measures will be pursued, a full complement may not be possible for these typically constrained sites, and this agreement addresses associated liability considerations.

- Crane Swing Agreement – identifies roles and responsibilities with respect to the installation and use of a construction crane that swings into Metrolinx airspace.

- Shoring System and Permission to Enter Agreement – identifies roles and responsibilities with respect to the installation, monitoring, and de-commissioning of development shorting and tiebacks.

- Construction Agreement - necessary when there are particular Developer obligations for protection of Metrolinx interests that go beyond the terms of a Work Permit; sets out specific parameters for construction and may identify communication protocols and/or restrictions on the nature, timing and/or duration of construction activity.

- Long Term Maintenance Agreement - will define the obligations of both parties to allow for ongoing maintenance and repairs of both Metrolinx Infrastructure and the development infrastructure in circumstances where conditions dictate that one impacts the other.

7.0 Rail Corridor Construction Considerations

Construction work within or in close proximity to an active Rail Corridor entails a number of unique and critical factors that must be considered to ensure that personnel, the public, infrastructure and transit service are suitably protected. Some key construction-oriented considerations are set out below. This and other material will be considered as part of the technical review process as described in section 4.4, with the specific scope to be defined by the Project characteristics. TPPR and their Third Party TA will provide further direction regarding specific information to be provided. It should be noted that certain arrangements, such as Rail Corridor access, have long lead times, so it is prudent to initiate construction-related discussions early in the Metrolinx engagement process.

7.1 Typical Development Construction Activities

7.1.1 Excavations, Shoring, and Tie-Back Installation

Any work that entails excavation within 10 metres of an active track – and particularly within the Track Zone of Influence (as illustrated in Figure 7.1) poses a potential risk to Metrolinx Infrastructure and will require detailed review of relevant plans and reports (including structural calculations), to be prepared by a qualified Professional Engineer.

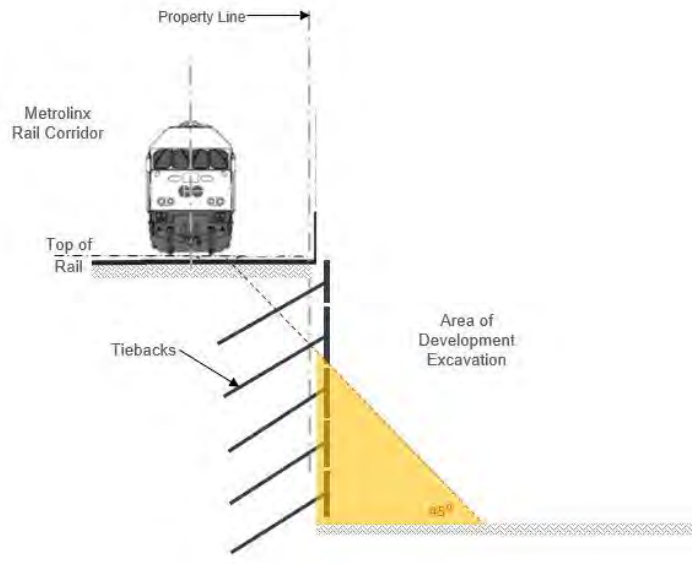


Figure 7.1: Developer Excavation within Metrolinx Track Zone of Influence

A common activity in this context is building shoring work – that may or may not involve the installation of tiebacks. It is recommended that proponents consider an alternate shoring method (e.g., use of rakers) that does not involve tiebacks in order to avoid the associated technical review, protocols, and the Shoring System Agreement as described in section 6.2.2.

With any excavation (and including tieback installation) monitoring of Metrolinx Infrastructure is required to ensure that structural or functional inadequacy does not develop as a result of the Developer's construction and to ensure the Developer's construction support of excavation system is functioning as designed and the loads on Metrolinx Infrastructure remain within design limits. The monitoring program is to be developed and delivered by a licensed Land Surveyor or a Professional Engineer registered in the jurisdiction of the Developer Project. Program parameters shall be established through a Ground Monitoring Plan, which identifies established monitoring thresholds/limiting values, procedures to ascertain settlement activity, and contingency measures for immediate remedial action to be taken in the event movement reaches the established threshold limits and/or damage is observed.

The Developer's Geotechnical Engineer shall provide monitoring reports to Metrolinx during the subject construction at an interval as established in the applicable Metrolinx Track and Structure monitoring standards. If acceptable settlement levels are exceeded, a Stop-Work-Order will be issued by Metrolinx or its TA and the Developer's Geotechnical Engineer shall be responsible for determining the root cause of the readings and for implementing immediate mitigating measures as outlined in the *Metrolinx Shoring Monitoring Alert Level Exceedance Procedure/Protocol* (refer to Appendix B).

7.1.2 Crane Usage

Any cranes being utilized, including mobile and stationary cranes, as part of a development Project that are located adjacent to the Metrolinx Rail Corridor will require Metrolinx approval. A Crane Swing Plan (sample illustrated in Figure 7.2) shall be provided by the development team to illustrate the swing radius and proximity to Metrolinx property. Any cranes that require encroachment of the boom within the airspace above the Metrolinx Rail Corridor shall trigger execution of a Crane Swing Agreement prior to erection of the crane on site. The Crane Swing Agreement identifies roles and responsibilities with respect to the use of the crane, including consideration of crane certifications, operator credentials, insurance requirements, and operational restrictions (active loads may not be moved within Metrolinx airspace without additional protection, for example).

It is recommended that proponents consider an alternate crane configuration that does not involve Rail Corridor airspace encroachment in order to avoid the associated technical review, protocols, and the Crane Swing Agreement as described in section 6.2.2.

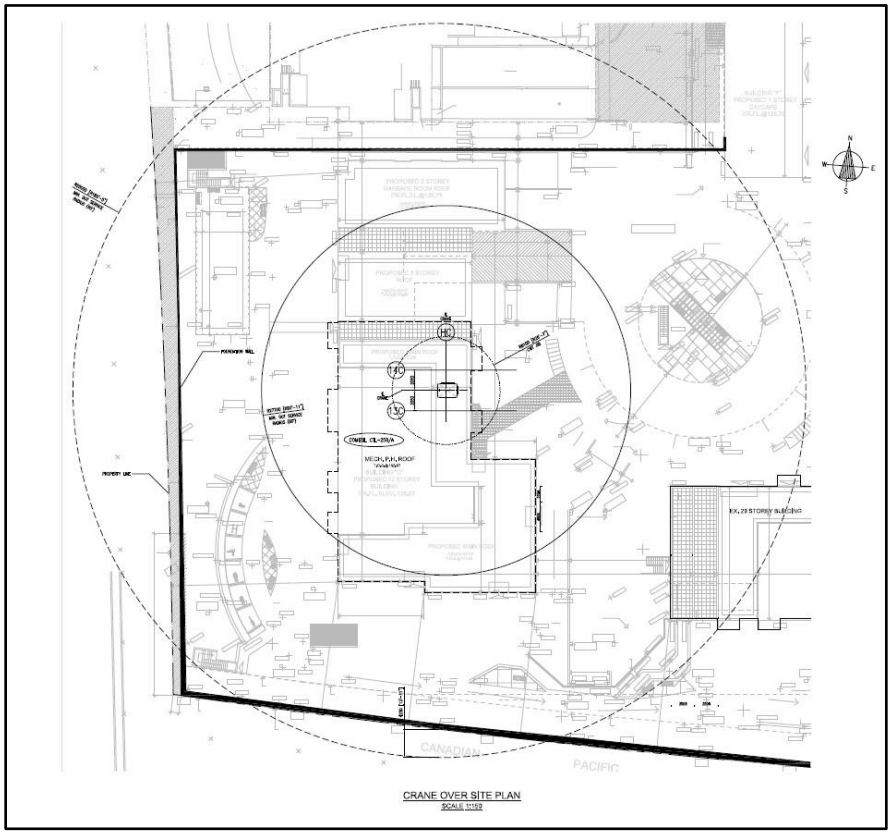


Figure 7.2: Sample Crane Swing Plan

7.2 Construction Management

7.2.1 Pre/Post-Construction Condition Survey

A pre-construction survey of existing Metrolinx Infrastructure is required to establish baseline conditions prior to the start of Developer construction. Likewise, a post-construction survey is required as a means of identifying any new structural or non-structural deficiencies / damage to Metrolinx Infrastructure arising as a result of the subject construction and shall be performed upon substantial completion of the Project. The condition surveys shall be comprised of both plans and photographic components, as appropriate, with survey limits extending up to 30 metres beyond the proposed Project limits within the Metrolinx Rail Corridor. Any damage to Metrolinx Infrastructure due to the development construction shall be the Developer's responsibility and cost to correct.

7.2.2 Construction Management Plan

A Construction Management Plan will identify key aspects of the proposed Project scope of work and will include descriptions of the following considerations as they are to exist within or in close proximity to the Rail Corridor:

- ✓ Type of construction activity and anticipated schedule
- ✓ Site access requirements
- ✓ Traffic management considerations – including definition of vehicular and pedestrian routes
- ✓ Positioning of construction machinery and equipment including stationary and movable cranes
- ✓ Location of and specifications for protective barriers/fencing including hoarding and overhead protection
- ✓ Location of staging, material stockpiles and laydown areas

7.2.3 Demolition Work Plan

A Demolition Work Plan shall be required for any proposed demolition of structures in close proximity to the Metrolinx Rail Corridor. These reports, to be prepared and stamped by a Professional Engineer, may include: a detailed narrative describing the demolition procedure – including hour-by-hour schedule; arrangement of work blocks and other protection; identification of practices and measures to protect Metrolinx Infrastructure from dust and debris; a pre- and post track inspection; a ground monitoring plan; crane/equipment/machinery swing/location plans with supporting documentation; hoarding locations; material stockpiling locations; structural calculations supporting proposed demolition Works; and a contingency plan to protect transit operation service commitments – all as applicable depending on the Project circumstances.

It should be noted that, while most construction-oriented activities tend to occur in the latter stages of a Project process, demolition work may occur before or in conjunction with the earlier planning and design phases, thereby requiring advance implementation of the technical review and Work Permit process described in section 4.4.

Appendix A – AECOM Submission Guidelines for Crash Walls

Submission Guidelines for Crash Walls

Crash walls may be required for the protection of overhead structures, and in some cases the Railway may consider a crash wall as an alternative to an earthen berm for the protection of structures or facilities adjacent to the track. When proposing or designing such a structure, the following components should be in the submission. Where there is a discrepancy between the requirements here and those provided by the client Railway or AREMA, the more stringent shall govern.

1. Covering Letter

- Summary of items enclosed,
- Location and date of previous, approved, similar designs by this designer, if any,
- Where the crash wall is proposed as an alternative to an earthen berm: alternative materials / configurations considered and benefits of this design,
- A Location or Key Plan. This will be used to identify the mileage and subdivision, the classification of the rail line, and the maximum speed for freight and passenger rail traffic, all obtained from AECOM Canada for CP and CN-owned corridors or from GO Transit for GO-owned corridors.
- Name, phone, fax and e-mail address of your contact.

2. Geotechnical Report - (2 copies)

- Soil properties used in design, and how determined,
- Borehole logs including location plan, if required to support these properties,
- Narrative report describing soil and ground water conditions, if required as above.

3. Design of Crash Walls

- One of the following methods may be chosen, or an alternative design load may be selected and if it can be justified by the engineer responsible for the design. The simplified approach of Method 1 may be used in most cases. Method 2 may be used to optimize the design, or where factors such as distance from the track to the wall, track speeds, side slopes along the track, consequences of collision or others may justify a different load.
- **Method 1**: The wall may be designed for a minimum point load of 600 kip (2700 kN) applied horizontally and normal to the face at any point along the wall
    - The point load shall be applied at a height of 6 feet (1.8 m) *above the top of rail* for walls up to 25 feet (7.6 m) from the centerline of track, or a height of 6 feet (1.8 m) *above the groundline* for walls farther than 25 feet (7.6 m) from the centerline of track.

  - This method may be applied where track speeds do not exceed 50 mph (80 km/hr) for freight or 70 mph (112 km/hr) for passenger trains; where speeds exceed these limits, Method 2 shall be used.

- **Method 2**: an energy balance approach considering collision by glancing blow and single car rotation may be used to determine the design load. The following four cases must be considered:

  - Freight Train Load Case 1 - Glancing Blow: nine cars weighing 143 tons (129 700 kg) each, impacting the wall at an angle, θ_G. The angle of impact will be a function of track curvature, and for tangent track may be taken as 3.5 degrees.

  - Freight Train Load Case 2 - Single Car Impact: single car weighing 143 tons (129 700 kg) impacting the wall as it undergoes rotation about its center. The angle of rotation at impact is:

    $$\theta_f = \text{asin}\left(\frac{d_{CL}}{8.5}\right) \quad [1]$$

    where d_{CL} is the distance from the crash wall to the centerline of track in m. The closest existing or future track is to be used. Where d_{CL} is greater than 8.5 m, this load case need not be considered.

  - Passenger Train Load Case 3 - Glancing Blow: eight cars weighing 74 tons (67120 kg) each impacting the wall at an angle, θ_G. The angle of impact will be a function of track curvature, and for tangent track may be taken as 3.5 degrees.

  - Passenger Train Load Case 4 - Single Car Impact: single car weighing 74 tons (67120 kg) impacting the wall as it undergoes rotation about its center. The angle of rotation at impact is:

    $$\theta_f = asin\left(\frac{d_{CL}}{13}\right) \quad [2]$$

    Where d_{CL} is greater than 13 m, this load case need not be considered.

  - The analysis should reflect the specified track speeds for passenger and/or freight trains applicable within the subject corridor.

  - To assist in designing the structure for the above load cases, use:

    - For the glancing blow load cases, the speed of derailed equipment impacting the wall is reduced from the track speed, v_o, to

      $$v_G = \sqrt{v_o^2 + 2a\left(\frac{d_{CL}-1.625}{\sin\theta_G}\right)} \text{ [m/s]} \quad [3]$$

      Where d_{CL} is the distance from the crash wall to the centerline of track in m.

      v_o is the track speed in m/s

      θ_G is the angle of impact

a is the acceleration in m/s, calculated as $-9.8(.25 + \mathrm{G})$

G is the grade in decimal unit of the groundline in the direction of travel defined by the angle of impact relative to the centerline of track; calculated as $\frac{Groundline\ at\ wall - Base\ of\ Rail}{d_{CL}/_{sin\theta_G}}$.

- For the single car load cases, the speed of derailed equipment impacting the wall is

$$v_A = \frac{2.3\theta_f}{\sqrt{1-cos\,\theta_f}}\left[\frac{m}{s}\right] for\ freight\ cars \quad [4]$$

$$v_A = \frac{2.9\theta_f}{\sqrt{1-cos\,\theta_f}}\left[\frac{m}{s}\right] for\ passenger\ cars \quad [5]$$

Where θ_f is the angle of impact, in radians, defined in [1] and [2].

- For energy dissipation, assume:
  - Contact with the wall stops all movement in the direction perpendicular to the wall, but not along its length
  - Plastic deformation of individual car due to direct impact is 1 foot (.3048 m) maximum,
  - Total compression of linkages and equipment of the 8 or 9 car consist is 10 feet (3.048 m) maximum,
  - Deflection of wall is considered negligible in equations [6] to [9]. Where the designer wishes to include it, those equations may be modified.
  - In lieu of more rigorous analysis, these energy balance equations may be used to determine the design load perpendicular to the wall. The design load acts along the given length of wall.
    - For the glancing blow load cases

$$F_G = \frac{\frac{1}{2}m(v_G \sin\theta_G)^2}{d_G} \quad [6]$$

And the load is considered to act along the length l_G in m:

$$l_G = \frac{3.048}{\cos\theta_G} \quad [7]$$

Where m is the mass of the derailed cars in kg.

v_G is the impact speed in m/s, defined in [3]

θ_G is the angle of impact

d_G is the deformation of the consist in the direction of the applied force, and $d_G = 3.048 \sin\theta_G$, in m

- For the single car impact

$$F_A = \frac{\frac{1}{2}m(v_A \cos\theta_f)^2}{d_A} \quad [8]$$

And the load is considered to act along the length l_A in m:

$$l_A = \frac{.3048}{\sin\theta_f} \quad [9]$$

Where m is the mass of the derailed cars in kg.

v_A is the impact speed in m/s, defined in [4] or [5]

θ_f is the angle of rotation at impact defined in [1] or [2]

d_A is the deformation of the consist in the direction of the applied force, and $d_A = .3048 \cos\theta_f$, in m

Where the influence areas of two sequential cars in an accordion style of derailment overlap, the wall must be designed for the simultaneous impact of both cars.

- Regardless of the method selected, the following guidelines must be followed:
    - The minimum thickness for walls up to 25 feet (7.6 m) from the centerline of track shall be 2'-6" (.760 m); minimum thickness for walls farther than 25 feet (7.6 m) from the centerline of track shall be 18 inches (.45 m).
    - Crash walls less than 12 feet (3.6 m) from the centerline of track shall be a minimum of 12 feet (3.6 m) above the top of rail. Crash walls between 12 feet (3.6 m) and 25 feet (7.6 m) from the centerline of track shall be a minimum of 7 feet (2.135 m) *above the top of rail*. Crash walls greater than 25 feet (7.6 m) from the centerline of track shall be a minimum of 7 feet (2.135 m) *above the adjacent groundline*.
    - The face of the crash wall shall be smooth and continuous, and shall extend a minimum of 6 inches (0.15 m) beyond the face of the structure (such as a building column or bridge pier) parallel to the track.
    - The design must incorporate horizontal and vertical continuity to distribute the loads from the derailed train.
    - The wall must be of solid, heavy construction, and separate precast blocks or stones will not be permitted.

4. Drawings - (2 hard copies as well as .pdf format)

- Site plan clearly showing property line, location of wall structure, centerline and elevation of nearest rail track,
- Layout and structural details of proposed structure, including all material notes and specs and construction procedures/phasing. All drawings signed and sealed by a professional engineer registered in the province having jurisdiction at the project location.
- Extent and treatment of any temporary excavations on railway property.

5. Cheque

- A cheque payable to AECOM will be required for the cost of this review. Please contact AECOM for current pricing. Cost will take into consideration number of submissions, site visits, meetings, and alternative or unusually complex designs.

6. Post-Construction Certificate - (1 copy)

- Engineer's certificate of completion describing actual construction, and certifying that the structure was built as per approved drawings,
- Copy of as-built drawings, as part of the engineer's certification of completion.

Access to Railway Operating Rights-of-Way

Permits **MUST** be obtained before entering into any Railway Operating right-of-way.

Some or all of the following may also be required: - proper railway flagging protection, cable locates, liability insurance, release of liability, safety training.

AECOM Canada Ltd. will provide guidance as to the proper process to be followed in this regard. Fees will be established based on the nature and extent of the work being proposed.

Communication for Submissions

All correspondence during the review process should be directed to AECOM Canada Ltd.

Upon completion of our review, a confidential report on our findings will be made to the railway company, who will subsequently contact the applicant.

The applicant will be notified when the report has been submitted to the railway.

Liability and Responsibility

The review will be undertaken with the understanding that neither the railway nor AECOM Canada Ltd. shall have any responsibility nor liability whatsoever for the design or adequacy of the crash wall, notwithstanding that any plans or specifications may have been reviewed by the railway nor AECOM Canada Ltd. No such review shall be deemed to limit the applicant's full responsibility for the design and construction adequacy of the works.

AECOM Canada Ltd.

Mississauga, Ont.

July 2005 Revised July 29, 2014

Appendix B – Metrolinx Shoring Monitoring Alert Level Exceedance Protocol/Procedure

1. For any project that entails excavation or shoring work adjacent to a Metrolinx rail corridor, the proponent shall be furnished with a list of all parties (the "Parties to be Notified") to be contacted should Track Monitoring Alert Levels be triggered (or any other issue(s) of concern arise) – See Notification List.

2. Upon an Alert Level exceedance at any time, the proponent shall immediately cease all work and notify the flagman (if available), followed by the interested parties via phone first, then email (See Notification List), with the Metrolinx Project Manager as the primary contact, to confirm that all associated excavation / shoring work has ceased. The Geotechnical engineer shall identify if the exceedance impacts the Track Zone of Influence.

3. WEEKEND / HOLIDAY AND OVERNIGHT / AFTER HOUR MONITORING:

   A list of "Emergency Contacts" shall be provided and included on the Notification List to provide coverage in the event that an Alert Level is triggered on a weekend, holiday or overnight / after hours (outside of typical weekday business hours of 8:00am – 5:00pm). These individuals shall ensure they are available during their assigned periods and are to be notified via the medium indicated.

   NOTE: These contacts may vary through the course of a project depending on availability. Assignment periods should be established prior to project initiation and may be revisited at regular intervals (including as a holiday period approaches, for example) as the project proceeds. Individuals must report if they will be unavailable during their assigned period so that alternate contacts can be assigned.

4. EXCEEDANCE IMPACTS TRACK ZONE OF INFLUENCE:

   a. All work shall cease, and the Metrolinx PM and Track COE shall meet immediately to discuss and determine if a call regarding the incident into the Network Operations Centre "NOC" is required. NOC Procedure to be followed.

      - Dependent on the emergency as determined above, the Director of Asset Management Track and Director Maintenance Delivery of Track will be notified, if required, to take out emergency protection in the event of the track being compromised.

      - Additionally, should Tracks need to be shut down a DCN / Safety Alert will be distributed by the NOC and an Operations Situational Assessment Call will be scheduled as per the emergency broadcast.

   b. The proponent shall arrange for immediate repairs to track, to undertake all necessary emergency work at their sole cost, in order to secure an "In-service Certificate" for the track(s) in question.

      Should for any reason the associated remedies require work to be completed by Metrolinx and / or its contractors, all such cost for said remedies shall be borne by the proponent /

developer. Any emergency access and flagging / protection will be determined through the Action Plan and arranged accordingly on an emergency basis, where required.

c. In addition to any emergency work above, the proponent shall provide as soon as possible, but no later than 24 hours, a Geotechnical Engineer's report, which shall address, but will not be limited to, the following minimum requirements:

    i. Visual and Site Conditions documentation (including photographs as appropriate) in particular, noting any stability concerns including:

        a) Track / Site Settlement
        b) Distress
        c) Ground surface deformation

    ii. Rationale and Root Cause of the emergency.

    iii. Conclusion from Geotechnical Engineer as to Root Cause and confirmation of appropriate Action Plan to address outstanding concerns.

d. Upon receipt of the Geotechnical Engineers Report and Action Plan, Metrolinx Stakeholders and the Metrolinx Technical Advisor, shall have 24 hours to review and comment on the Geotechnical Report and Action Plan.

e. Concurrent to this review, the Metrolinx Project Manager shall schedule a meeting, including the proponent, Metrolinx stakeholders and the Metrolinx Technical Advisor, to review the Geotechnical Report, Action Plan, and any corresponding comments, within two (2) days from receipt of Geotechnical Report (i.e., within 24 hours following issuance of the Metrolinx Technical Advisor comments).

    The intent of the meeting shall be to confirm steps required to address the prevailing issues of concern related to the subject excavation / shoring works.

f. Based on the outcome of the consensus meeting, the Metrolinx Project Manager shall issue meeting minutes documenting the confirmed Action Plan as approved by Metrolinx Stakeholders and Metrolinx Technical Advisor, for which the proponent shall at their cost, take the necessary action as deemed appropriate to address any remaining issues of concern.

    Bi-weekly meetings shall be scheduled going forward to ensure compliance with the action plan and to review reports, as required.

g. Work cannot resume until such time as Track COE have performed a track inspection and authorized the resumption of work via Action Plan.

5. EXCEEDANCE DOES NOT IMPACT TRACK ZONE OF INFLUENCE:

    a. The Metrolinx Project Manager shall confirm receipt of exceedance notice and cessation of work by phone first, then email and shall advise proponent of requirements for a Geotechnical Engineer's report and Action Plan per item 4 below.

For weekend / holiday or overnight / after hours notice requirements see Section 3 above.

b. For work to resume where there is no impact to the Track Zone of Influence, the proponent shall provide as soon as possible, but no later than 24 hours from receipt of the Metrolinx Confirmation email, - a Geotechnical Engineer's report.

   The Geotechnical Engineer's report shall address, but will not be limited to, the following minimum requirements:

   i. Visual and Site Conditions documentation (including photographs as appropriate) in particular, noting any stability concerns including:

      a) Track / Site Settlement
      b) Distress
      c) Ground surface deformation

   ii. Rationale and Root Cause for the Alert Level notification.

   iii. Conclusion from Geotechnical Engineer as to Root Cause and confirmation of appropriate Action Plan to address outstanding concerns.

c. Upon receipt of the Geotechnical Engineers Report and Action Plan, the Metrolinx Technical Advisor and Internal MX Stakeholders shall have 24 hours to review and comment on the Geotechnical Report and Action Plan.

d. Concurrent to this review, the Metrolinx Project Manager shall schedule a meeting, including the proponent, Metrolinx Stakeholders and the Metrolinx Technical Advisor, to review the Geotechnical Report, Action Plan, and any corresponding comments, within two (2) days from receipt of Geotechnical Report (i.e., within 24 hours following issuance of the Metrolinx Technical Advisor comments).

   The intent of the meeting shall be to confirm steps required to address the prevailing issues of concern related to the subject excavation / shoring works.

e. Based on the outcome of the consensus meeting, the Metrolinx Project Manager shall issue meeting minutes documenting the confirmed Action Plan and steps towards resumption of work, as approved by Metrolinx Stakeholders and Metrolinx Technical Advisor.

   The proponent shall take the necessary action as deemed appropriate, at their cost, in order to address the prevailing issue(s) of concern such that the Alert Level is ceased and there is no further risk to the rail corridor at which time work may resume. Where required, a final inspection will be performed by AECOM and any necessary MX Stakeholders prior to resumption of work.

   Bi-weekly meetings shall be scheduled going forward to ensure compliance with the action plan and to review reports, as required.

NOTE:

Should for any reason the associated remedies require work to be completed by Metrolinx and / or its contractors, all such cost for said remedies shall be borne by the proponent / developer. Any emergency access and flagging / protection will be determined through the Action Plan and arranged accordingly on an emergency basis, where required.

Monitoring Report Notification List and Emergency Contacts

All Monitoring Reports will be submitted within 24 hours of observations to the following individuals along with a Synopsis of Observations (See Sample Below):

For weekend / holiday or overnight / after hours notice requirements see Section 3 above.

Parties to be Notified:	Attention To:	Email / Phone for Monitoring Submissions and Alert Exceedance within Working Hours	Emergency Contact (Weekend / Holiday & Overnight / After Hours)
Third Party Project Review (TPPR)	Select Staff Person	Select Contact Information	Direct to NOC
	Adam Snow	Adam.snow@metrolinx.com (416) 528-4864	
	Alvin Chan	Alvin.chan@metroinx.com (437) 324-2112	
		Enforcement Officer	
AECOM	Rab Nawaz	Rab.Nawaz@aecom.com	-
	Mustafa Alkiki	Mustafa.Alkiki@aecom.com	-
	Haider Jafar	Haider.jafar@aecom.com (647) 234-2034	Email and Call
	Manan Raval	Manan.Raval@aecom.com (647) 339 0215	Email and Call
*Bridges and Structures *(General Email TBD – Q1 2023)*	Input B&S Specialist Name	Input B&S Specialist Contact Info	TBD
	Jessie Li	Jessie.li@metrolinx.com	
Track COE	General Email	track.coe.dept@gotransit.com	Email
	Weekend On-Call #	(416) 202-7823	Call
	Mark Austin	(416) 529- 0804 (Emergencies)	Call
Third Party Capital Infrastructure Coordination (CIC)	Input CIC PM Name	Input CIC PM Contact Info	Direct to NOC
	Syed Quli	syed.quli@metrolinx.com (647) 449-4655	Direct to NOC

Sample Synopsis of Observations:

Sample Synopsis.xlsx

Document Revision History

Version #	Date	Revised By	Description
1.0	10 January 2013	Jeff Bateman	Final
2.0	01 April 2013	Jeff Bateman	Updated - new corridor purchase
3.0	22 April 2013	Adam Snow	Content revisions
4.0	December 2022	Adam Snow	Comprehensive Update
5.0	February 2023	Adam Snow	Shoring Monitoring Update
6.0	June 2023	Adam Snow	Work Permit Zone Update

Document Details

Issuing Department	Third Party Projects Review
Document Owner	Director, Third Party Projects Review
Update Authority	Director, Third Party Projects Review
Intended Audience	Division Personnel and External Stakeholders
Original Issue Date	
Effective Date	
Expiry Date	
Document Status	Final Version
Review Cycle	Five-Year
File Name	Third Party Projects Review Adjacent Development Guidelines GO Transit Heavy Rail Corridors
File Location	

END OF DOCUMENT

Railway Properties

1 Administration Rd
Concord, ON L4K 1B9
Telephone: 514-399-7627
Fax: 514-399-4296

PRINCIPAL MAIN LINE REQUIREMENTS

A. Safety setback of habitable buildings 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. The Owner shall engage a consultant to undertake an analysis of noise. At a minimum, a 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, the Railway 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, ±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: Canadian National Railway Company or its assigns or successors in interest has or have a rights-of-way within 300 metres from the land the subject hereof. There may be alterations to or expansions of the railway facilities on such rights-of-way in the future including the possibility that the railway or its assigns or successors as aforesaid may expand its 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). CNR will not be responsible for any complaints or claims arising from use of such facilities and/or operations on, over or under the aforesaid rights-of-way."

F. Any proposed alterations to the existing drainage pattern affecting railway property must receive prior concurrence from the Railway and be substantiated by a drainage report to the satisfaction of the Railway.

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 CN.

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

I. The Owner shall be required to grant CN an environmental easement for operational noise and vibration emissions, registered against the subject property in favour of CN.

Appendix B:

Traffic Data

Brant St @ Plains Rd E

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 9:00:00

One Hour Peak
From: 7:45:00
To: 8:45:00

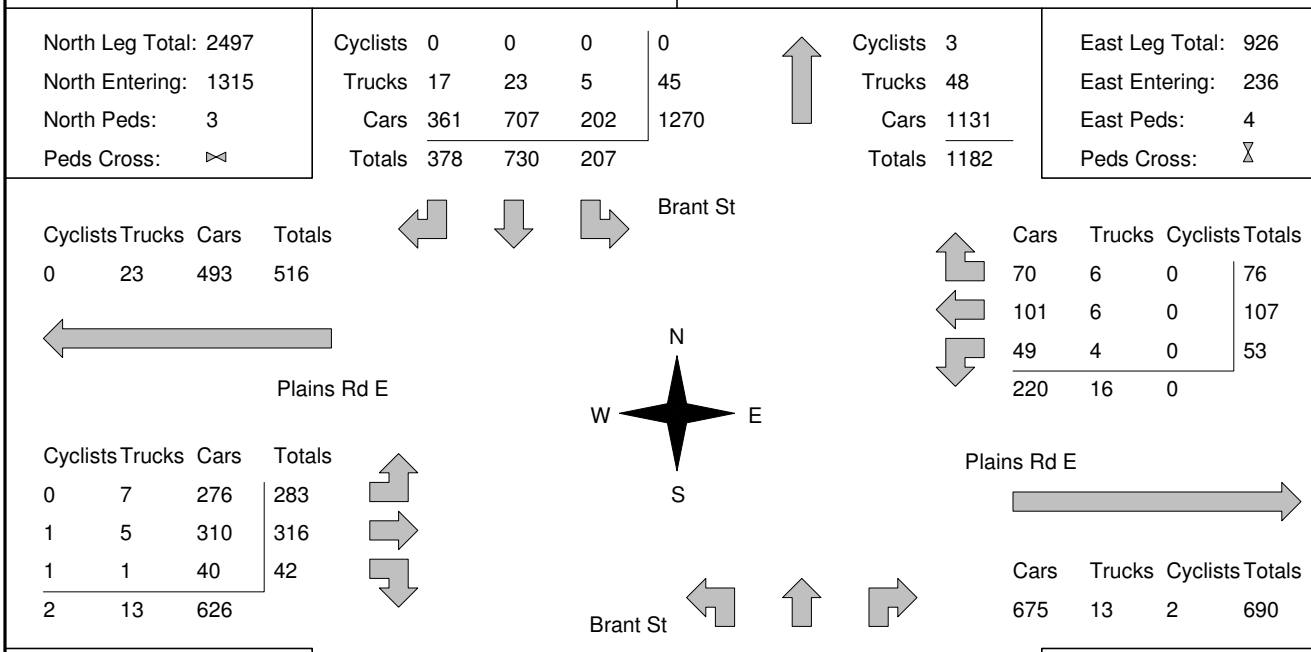
Municipality: Halton Region
Site #: 1020610100
Intersection: Brant St & Plains Rd E
TFR File #: 5
Count date: 8-May-2024

Weather conditions:
Clear/Dry

Person(s) who counted:
Pyramid Traffic Inc

**** Signalized Intersection ****

Major Road: Brant St runs N/S



Comments

Brant St @ Plains Rd E

Mid-day Peak Diagram

Specified Period
From: 11:00:00
To: 14:00:00

One Hour Peak
From: 12:30:00
To: 13:30:00

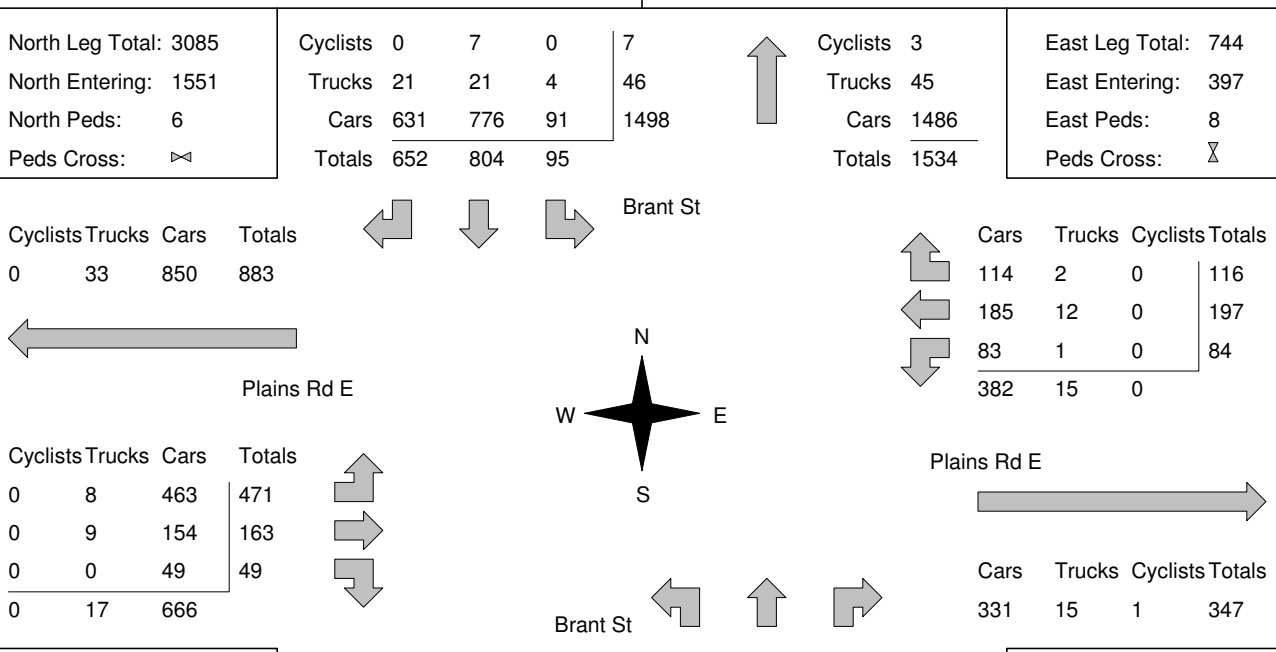
Municipality: Halton Region
Site #: 1020610100
Intersection: Brant St & Plains Rd E
TFR File #: 5
Count date: 8-May-2024

Weather conditions:
Clear/Dry

Person(s) who counted:
Pyramid Traffic Inc

**** Signalized Intersection ****

Major Road: Brant St runs N/S



Comments

Brant St @ Plains Rd E

Afternoon Peak Diagram

Specified Period
From: 15:00:00
To: 18:00:00

One Hour Peak
From: 16:30:00
To: 17:30:00

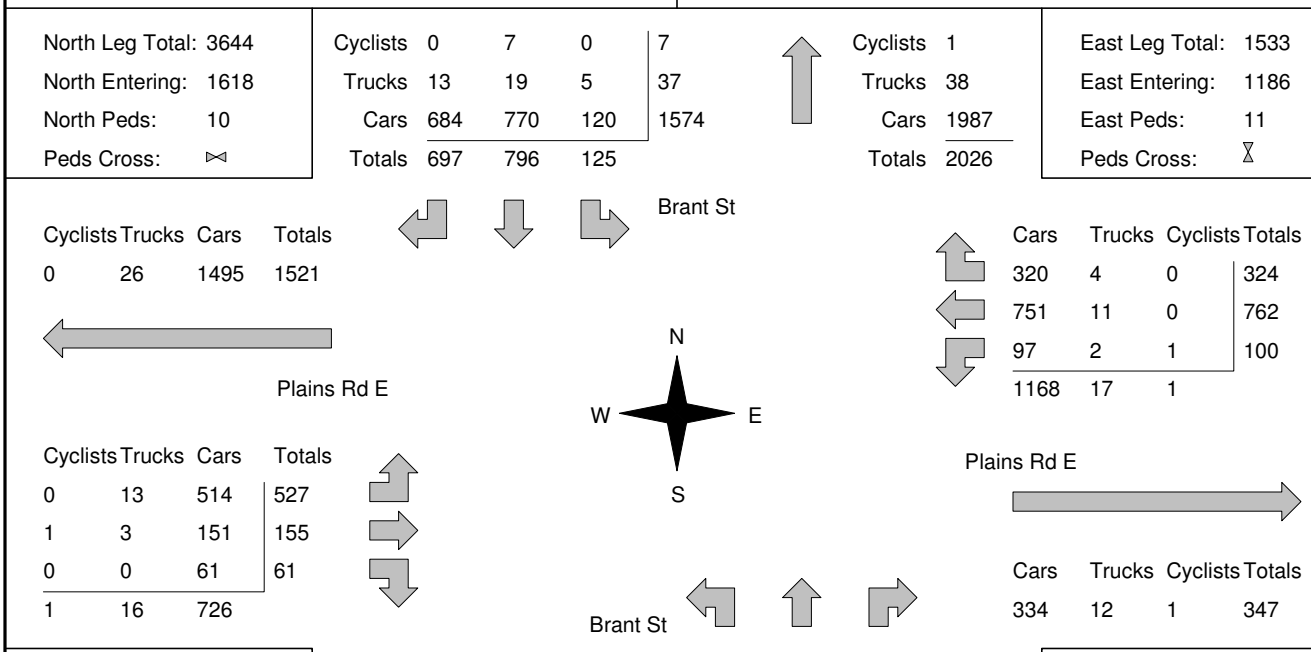
Municipality: Halton Region
Site #: 1020610100
Intersection: Brant St & Plains Rd E
TFR File #: 5
Count date: 8-May-2024

Weather conditions:
Clear/Dry

Person(s) who counted:
Pyramid Traffic Inc

**** Signalized Intersection ****

Major Road: Brant St runs N/S



Comments

Brant St @ Plains Rd E

Total Count Diagram

Municipality: Halton Region
Site #: 1020610100
Intersection: Brant St & Plains Rd E
TFR File #: 5
Count date: 8-May-2024

Weather conditions:
Clear/Dry

Person(s) who counted:
Pyramid Traffic Inc

**** Signalized Intersection ****

Major Road: Brant St runs N/S

North Leg Total:	23977			
North Entering:	11412			
North Peds:	46			
Peds Cross:	⋈			
Cyclists	0	32	3	35
Trucks	132	181	34	347
Cars	4267	5780	983	11030
Totals	4399	5993	1020	
Cyclists	23			
Trucks	396			
Cars	12146			
Totals	12565			
East Leg Total:	8156			
East Entering:	4770			
East Peds:	62			
Peds Cross:	⧖			

Brant St

Cyclists	Trucks	Cars	Totals
1	210	7292	7503

Plains Rd E

Cyclists	Trucks	Cars	Totals
1	97	3322	3420
3	46	1526	1575
1	7	394	402
5	150	5242	

Cars	Trucks	Cyclists	Totals
1396	33	2	1431
2698	68	1	2767
552	19	1	572
4646	120	4	

N
W E
S

Plains Rd E

Cars	Trucks	Cyclists	Totals
3269	106	11	3386

Brant St

Peds Cross:	⧖			
West Peds:	72			
West Entering:	5397			
West Leg Total:	12900			
Cars	6726			
Trucks	207			
Cyclists	34			
Totals	6967			
Cars	327	7428	760	8515
Trucks	10	266	26	302
Cyclists	0	20	5	25
Totals	337	7714	791	
Peds Cross:	⋈			
South Peds:	29			
South Entering:	8842			
South Leg Total:	15809			

Comments

Outlook

RE: Road traffic data request - Brant Street (1056 Brant Street, Burlington - HGC Acoustics - NFS)

From Scattolon, Walter <Walter.Scattolon@halton.ca>
Date Mon 2025-09-29 11:11 AM
To Iouri Basmanov <IBasmanov@hgcacoustics.com>
Cc Krusto, Matt <Matt.Krusto@halton.ca>

Hello Victor,

In response to your inquiry for traffic data, we have the following response.

Please use the following assumptions for Ultimate volumes:

Brant Street (Regional Road 18) Fairview Street to North Service Road:

Lanes: **6**
AADT: ***55,000***
Heavy Trucks: **2%**
Medium Trucks: **2%**

We trust this meets with your needs at this time.

Take care,
Walter

From: Iouri Basmanov <IBasmanov@hgcacoustics.com>
Sent: Friday, September 26, 2025 11:16 AM
To: Scattolon, Walter <Walter.Scattolon@halton.ca>
Cc: Access Halton <accesshalton@halton.ca>
Subject: Road traffic data request - Brant Street

CAUTION: This email originated from outside the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe. If you are unsure or need assistance please contact the IT Service Desk.

Good morning Walter,

I received your contact information from my colleague, Victor Garcia.

We are working on a project located at 1056 Brant Street, in Burlington, located here:

https://maps.app.goo.gl/YzRTycRme7zUgmaf6

Would you be able to provide ultimate traffic data or hourly traffic data for Brant Street in this area (and commercial vehicle percentages if available)?



Thank you very much in advance,

Iouri Basmanov, P.Eng., INCE
Project Engineer

HGC NOISE | VIBRATION | ACOUSTICS 30 YEARS 1994 2024

HGC NOISE VIBRATION ACOUSTICS
2000 Argentia Road, Plaza One, Suite 203, Mississauga, Ontario, Canada L5N 1P7
t: 905-826-4044 x268 **e**: ibasmanov@hgcacoustics.com
Visit our website – www.hgcacoustics.com **Follow Us** – LinkedIn | X | YouTube

This e-mail and any attachments may contain confidential and privileged information. If you are not the intended recipient, please notify the sender immediately by return e-mail, delete this e-mail and destroy any copies. Any dissemination or use of this information by a person other than the intended recipient is unauthorized and may be illegal. The content of this email and any attachments prepared by HGC Noise Vibration Acoustics have limitations.

AADT 2022

Private Member
City of Burlington

Summary

City of Burlington Annual Average Daily Traffic (AADT) - Year 2022

View Full Details

Download

Details

Dataset
Feature Layer

April 12, 2024 at 12:21:03 PM EDT
Info Updated

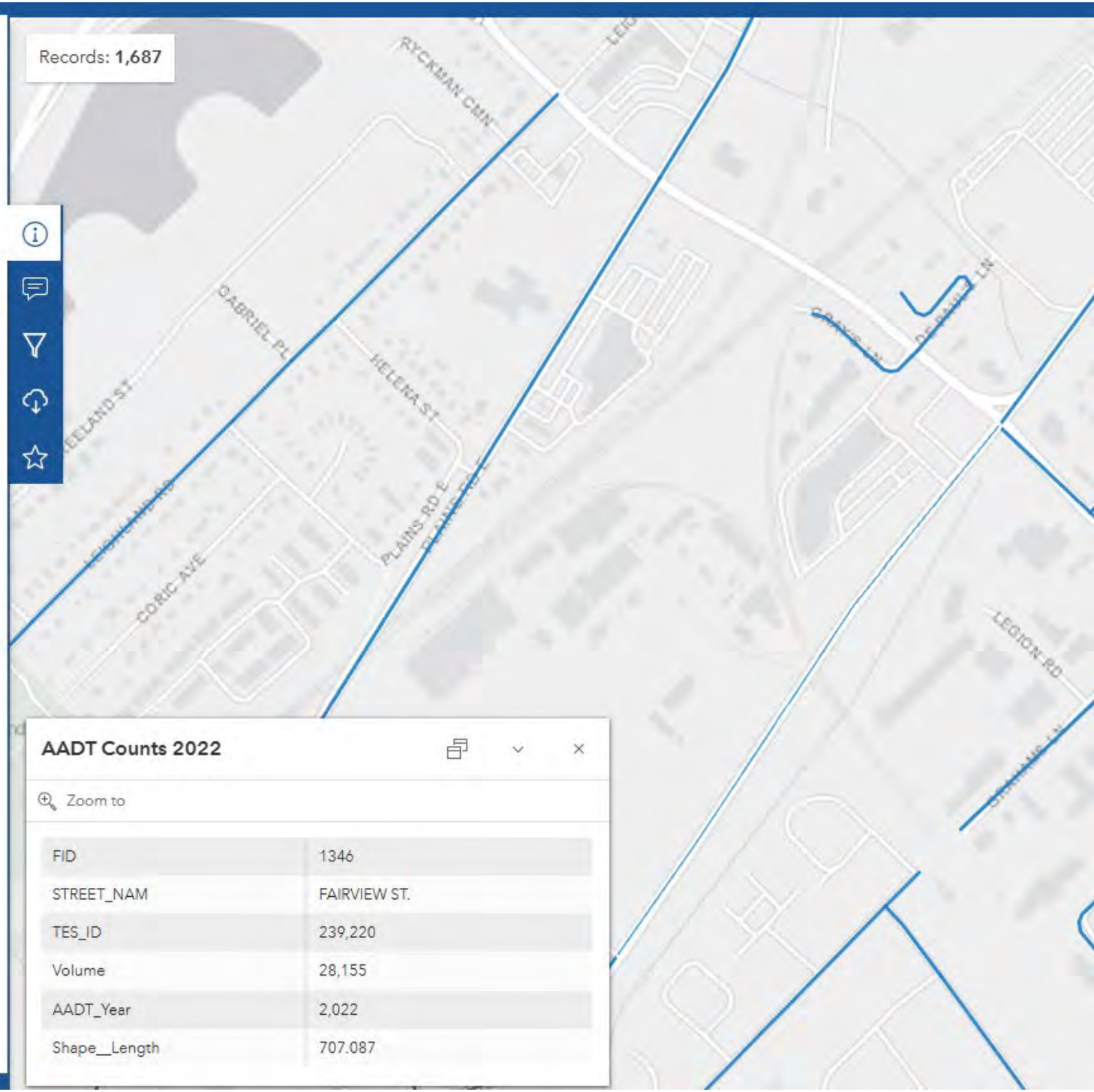
April 12, 2024 at 12:21:02 PM EDT
Data Updated

April 12, 2024 at 12:16:07 PM EDT
Published Date

Records: 1,687
View data table

Public
Anyone can see this content

Custom License
View license details



SEVEN DAY HOURLY REPORT

Station 1: QEWDN0050DSS

HIGHWAY: QEW | STREAM: SINGLE ROADWAY | DIRECTION: FORT ERIE BOUND

LHRS / OFFSET: 10120 / 0.2 | LOCATION: (43.338, -79.828) | DESCRIPTION: QEW AT FREEMAN

Station 2: QEWDN0050DNS

HIGHWAY: QEW | STREAM: SINGLE ROADWAY | DIRECTION: TORONTO BOUND

LHRS / OFFSET: 10120 / 0.2 | LOCATION: (43.338, -79.828) | DESCRIPTION: QEW AT FREEMAN

CONFIDENCE LEVEL: 95%

	MON		TUE		WED		THU		FRI		SAT		SUN	
	15-Dec.-25		16-Dec.-25		17-Dec.-25		18-Dec.-25		19-Dec.-25		20-Dec.-25		21-Dec.-25	
	VDS1	VDS2	VDS1	VDS2	VDS1	VDS2	VDS1	VDS2	VDS1	VDS2	VDS1	VDS2	VDS1	VDS2
HOUR-ENDING	Loops	Loops	Loops	Loops	Loops	Loops	Loops	Loops	Loops	Loops	Loops	Loops	Loops	Loops
01:00	575	443	645	376	642	422	677	502	844	589	1098	707	1387	961
02:00	387	261	439	262	418	282	495	315	570	375	714	550	848	567
03:00	273	267	297	237	346	279	315	290	362	304	495	398	557	451
04:00	255	395	272	438	239	401	301	424	354	441	413	343	420	330
05:00	398	993	408	1051	407	972	399	982	391	935	330	445	272	329
06:00	995	2896	896	2992	959	2898	916	2760	867	2447	555	867	409	588
07:00	1885	3503	1907	3646	1846	3100	1830	3443	1662	3245	902	1141	622	740
08:00	2355	3091	2556	3405	2592	3371	2614	3327	2392	2969	1378	1364	963	840
09:00	2318	3290	2207	3303	2518	3271	2515	3219	2332	2999	1849	1868	1226	1218
10:00	2316	3180	2585	3087	2525	3200	2477	3158	2343	2988	2568	2535	1874	2144
11:00	2395	2635	2528	2721	2619	2852	2378	2907	2662	2860	3023	2855	2691	2562
12:00	2689	2602	2735	2845	2848	2888	2608	2810	2859	2999	3349	3148	3170	3015
13:00	2502	2177	2726	2699	2776	2700	2717	2871	3026	2807	3242	3200	3259	3365
14:00	2649	2644	2871	2717	3039	2811	2715	2798	3019	2992	3281	3174	3166	3172
15:00	2890	2442	2813	2780	3128	2891	3319	2818	3330	2986	3378	3241	3160	3221
16:00	3276	2551	2963	2810	2925	2793	3239	2760	3118	2194	3279	3010	3092	2870
17:00	3072	2712	2883	2993	2920	3007	3051	2879	3366	2966	3317	3165	2887	2926
18:00	3164	2645	3101	2946	2984	3013	3231	2865	2980	2988	3125	3009	2915	2862
19:00	2887	2260	3134	2359	3246	2414	2941	2547	2553	2931	N/A	N/A	2690	2683
20:00	2454	1804	2762	1878	2868	1995	2811	2066	2492	2246	2438	2379	2497	2343
21:00	1909	1444	2169	1450	2421	1891	2291	1680	2553	1772	2406	1961	2290	2010
22:00	1561	1243	1808	1355	1945	1615	1991	1538	1975	1521	2163	2039	2104	1648
23:00	1261	916	1631	973	1534	1216	1707	1157	1741	1361	2032	1844	1702	1382
23:59	1005	645	1263	688	1123	769	1286	859	1520	1044	1722	1474	1200	910
24 Hr Total	45,471	47,039	47,599	50,011	48,868	51,051	48,824	50,975	49,311	50,959	47,057	44,717	45,401	43,137
A.M. Total	16,841	23,556	17,475	24,363	17,959	23,936	17,525	24,137	17,638	23,151	16,674	16,221	14,439	13,745
P.M. Total	28,630	23,483	30,124	25,648	30,909	27,115	31,299	26,838	31,673	27,808	30,383	28,496	30,962	29,392
Noon-Noon			46,105	47,846	48,083	49,584	48,434	51,252	48,937	49,989	48,347	44,029	44,822	42,241
Highest Hour Starting	15:00	06:00	18:00	06:00	18:00	07:00	14:00	06:00	16:00	06:00	14:00	14:00	12:00	12:00
Highest Hour Volume	3,276	3,503	3,134	3,646	3,246	3,371	3,319	3,443	3,366	3,245	3,378	3,241	3,259	3,365

VDS 1 ADT = 47,504 | VDS 2 ADT = 48,270 | VDS1 AWD = 47,890 | VDS2 AWD = 49,668

ADT (Average Daily Traffic)-The average daily volume of the days being displayed LHRS (Linear Highway Reference

AWD (Average Weekday Traffic) - The average weekday traffic based on data taken from Monday @noon to Friday @noon.

Dec. 22, 2025 10:51:32

SEVEN DAY HOURLY REPORT

Station 1: QEWDN0020DNS

HIGHWAY: QEW | STREAM: SINGLE ROADWAY | DIRECTION: TORONTO BOUND

LHRS / OFFSET: 10113 / 1.2 | LOCATION: (43.322, -79.819) | DESCRIPTION: N. OF HWY. 2

Station 2: QEWDN0020DSS

HIGHWAY: QEW | STREAM: SINGLE ROADWAY | DIRECTION: FORT ERIE BOUND

LHRS / OFFSET: 10113 / 1.2 | LOCATION: (43.322, -79.819) | DESCRIPTION: S. OF FAIRVIEW

CONFIDENCE LEVEL: 95%

	MON		TUE		WED		THU		FRI		SAT		SUN	
	08-Dec.-25		09-Dec.-25		10-Dec.-25		11-Dec.-25		12-Dec.-25		13-Dec.-25		14-Dec.-25	
	VDS1	VDS2	VDS1	VDS2	VDS1	VDS2	VDS1	VDS2	VDS1	VDS2	VDS1	VDS2	VDS1	VDS2
HOUR-ENDING	Loops	Loops	Loops	Loops	Loops	Loops	Loops	Loops	Loops	Loops	Loops	Loops	Loops	Loops
01:00	504	776	525	942	515	963	536	956	610	1129	1002	1607	1268	1697
02:00	362	453	362	636	366	626	382	606	395	638	638	1020	760	993
03:00	307	412	330	430	386	451	407	445	340	494	513	656	443	683
04:00	456	370	484	398	522	365	524	460	496	485	428	436	366	480
05:00	1269	629	1313	582	1266	588	1297	639	1162	606	535	433	413	372
06:00	4010	1497	3947	1421	3489	1222	3703	1382	3338	1336	1007	615	693	472
07:00	5227	2843	5351	2822	4684	2240	5204	2644	4718	2568	1521	1114	1002	722
08:00	5802	3838	6042	4194	4961	2988	5963	3930	5456	3866	1679	1927	1250	1221
09:00	5579	4354	5755	4260	4665	3799	5399	4300	5205	3995	3092	2561	1822	1719
10:00	4703	4085	4847	3997	4299	3534	5032	3942	4889	4068	3723	3466	3075	2690
11:00	4302	4056	4367	3883	3550	3281	4702	4184	4635	4255	4032	4009	4164	3700
12:00	4346	4165	4287	4244	3650	3539	4536	4229	4819	4531	5271	4646	4781	4009
13:00	4307	4278	4291	4404	3509	3633	4360	4560	4714	4757	5038	4926	5190	4681
14:00	4232	4652	4084	4503	3442	3999	4500	4847	4734	5235	5070	5068	4826	4829
15:00	4494	5139	4406	4818	3737	4652	4730	5267	5085	5626	4921	5225	4902	4698
16:00	4743	5833	4625	5350	4059	5377	5050	5726	5244	5670	5102	5207	4638	4679
17:00	4763	5928	4222	5008	4166	5028	4989	5363	5087	5147	5241	5022	4431	4400
18:00	4322	5189	4044	4713	3640	4855	4669	5414	4976	5014	4876	4754	4393	4576
19:00	3211	4933	3007	4096	2977	3871	3613	5057	4418	4269	4127	4515	3852	4112
20:00	2511	3764	2325	3323	2268	3130	2809	3942	3652	4399	3479	3614	3287	3303
21:00	2091	2718	1799	3191	1770	2594	2500	3311	2668	3624	2725	3068	2611	3192
22:00	1746	2200	1546	2294	1623	2338	2088	2842	2366	2961	2598	3021	1916	2610
23:00	1254	1750	1173	1833	1267	1863	1613	2429	1868	2640	2434	2759	1383	1915
23:59	881	1594	931	1595	920	1423	962	1928	1445	2280	1887	2350	968	1363
24 Hr Total	75,422	75,456	74,063	72,937	65,731	66,359	79,568	78,403	82,320	79,593	70,939	72,019	62,434	63,116
A.M. Total	36,867	27,478	37,610	27,809	32,353	23,596	37,685	27,717	36,063	27,971	23,441	22,490	20,037	18,758
P.M. Total	38,555	47,978	36,453	45,128	33,378	42,763	41,883	50,686	46,257	51,622	47,498	49,529	42,397	44,358
Noon-Noon			76,165	75,787	68,806	68,724	71,063	70,480	77,946	78,657	69,698	74,112	67,535	68,287
Highest Hour Starting	07:00	16:00	07:00	15:00	07:00	15:00	07:00	15:00	07:00	15:00	11:00	14:00	12:00	13:00
Highest Hour Volume	5,802	5,928	6,042	5,350	4,961	5,377	5,963	5,726	5,456	5,670	5,271	5,225	5,190	4,829

VDS 1 ADT = 72,925 | VDS 2 ADT = 72,555 | VDS1 AWD = 73,495 | VDS2 AWD = 73,412

ADT (Average Daily Traffic)-The average daily volume of the days being displayed LHRS (Linear Highway Reference

AWD (Average Weekday Traffic) - The average weekday traffic based on data taken from Monday @noon to Friday @noon.

Dec. 19, 2025 14:02:11

Iouri Basmanov

From: Butler, Shawn (MTO) <Shawn.Butler@ontario.ca>
Sent: December 22, 2025 3:53 PM
To: Iouri Basmanov
Cc: Patel, Sohil (MTO); Sedkowski, Martin (MTO); Zivkovic, Branko (MTO)
Subject: Re: Traffic data request for Highway 403 & QEW near Burlington
Attachments: 10120 000 - QEW - MTO - CENTRAL - TORONTO - BURLINGTON - Freeman IC.pdf; Hwy 403 WB&EB East of Waterdown Rd Mainline.pdf; IC 100 Ramp 26.pdf; IC 100 Ramp 29.pdf; IC 100 Ramp 58.pdf; QEW @ Freeman IC.pdf; IC 101 Ramp 25.pdf; IC 101 Ramp 55.pdf; IC 101 Ramp 61.pdf; Mainline QEW Tor Bound @ Brant St.pdf; 10121 000 - QEW - MTO - CENTRAL - TORONTO - BURLINGTON - Brant Street.pdf; 10116 000 - QEW - MTO - CENTRAL - TORONTO - BURLINGTON Fairview Plains Road.pdf; QEW Tor&Nia Bound N of Hwy 2.pdf

Iouri Basmanov:

Please find attached, the available valid Mainline and Ramp Volume counts for the area requested. I have also attached the Interchange Diagrams identifying the ramp numbers at each interchange.
The latest published data for Commercial Traffic (2021) indicates 25% truck traffic for mainline segments on the QEW within the study area, and 8% on the portion of the Hwy 403 extending West of the QEW IC 100.

Regards,

S. Butler

From: Zivkovic, Branko (MTO) <Branko.Zivkovic@ontario.ca>
Sent: December 18, 2025 2:05 PM
To: Sedkowski, Martin (MTO) <Martin.Sedkowski@ontario.ca>; ibasmanov@hgcacoustics.com <ibasmanov@hgcacoustics.com>; Butler, Shawn (MTO) <Shawn.Butler@ontario.ca>
Cc: Patel, Sohil (MTO) <Sohil.Patel@ontario.ca>; Zivkovic, Branko (MTO) <Branko.Zivkovic@ontario.ca>
Subject: RE: Traffic data request for Highway 403 & QEW near Burlington

Hi Shawn:

Please see the request below and provide the available data that we have. 24/7 mainline volumes at all 3 legs of the Freeman IC should provide a lot of the requested info. Not sure if we have the requested ramp counts at Brant and Fairview, but please check. If we have Freeman Ramp counts, then send those as well. We should have truck % data for all 3 legs of the Freeman, minus Hwy 407.

Please send the requested data to Iouri.

Thanks

Branko Zivkovic
Traffic Supervisor, Central Region, Area 2
Operational Traffic Engineering | Highway Operations Management / Operations Division
Ministry of Transportation | Ontario Public Service
905-537-2316 | Branko.Zivkovic@ontario.ca

Ontario

From: Sedkowski, Martin (MTO) <Martin.Sedkowski@ontario.ca>
Sent: December 18, 2025 1:01 PM
To: Zivkovic, Branko (MTO) <Branko.Zivkovic@ontario.ca>; ibasmanov@hgcacoustics.com
Cc: Patel, Sohil (MTO) <Sohil.Patel@ontario.ca>
Subject: FW: Traffic data request for Highway 403 & QEW near Burlington

Iouri Basmanov

From: Rail Data Requests <RailDataRequests@metrolinx.com>
Sent: December 16, 2025 4:26 PM
To: Iouri Basmanov
Subject: RE: Rail data request - 25 Liberty Street

Good afternoon,

Further to your request dated December 15, 2025, the subject lands (1376 Plains Road E, Burlington) are located within proximity of the Metrolinx Oakville Subdivision (which carries Lakeshore West GO rail service).

It's anticipated that GO rail service on this Subdivision will be comprised of diesel and electric trains. The GO rail fleet combination on this Subdivision will consist of up to 1 locomotive and 10 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 398 trains. The planned detailed trip breakdown is listed below:

	1 Diesel Locomotive	1 Electric Locomotive		1 Diesel Locomotive	1 Electric Locomotive
Day (0700-2300)	132	192	Night (2300-0700)	20	54

The current track design speed near the subject lands is 95 mph (153 km/h).

There are no *anti-whistling by-laws* in affect near the subject lands.

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.
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,

Jenna Auger (She/Her)
Project Analyst, Adjacent Construction Review (ACR)
Development & Real Estate Management
T: (416)-881-0579
20 Bay Street | Toronto | Ontario | M5J 2W3

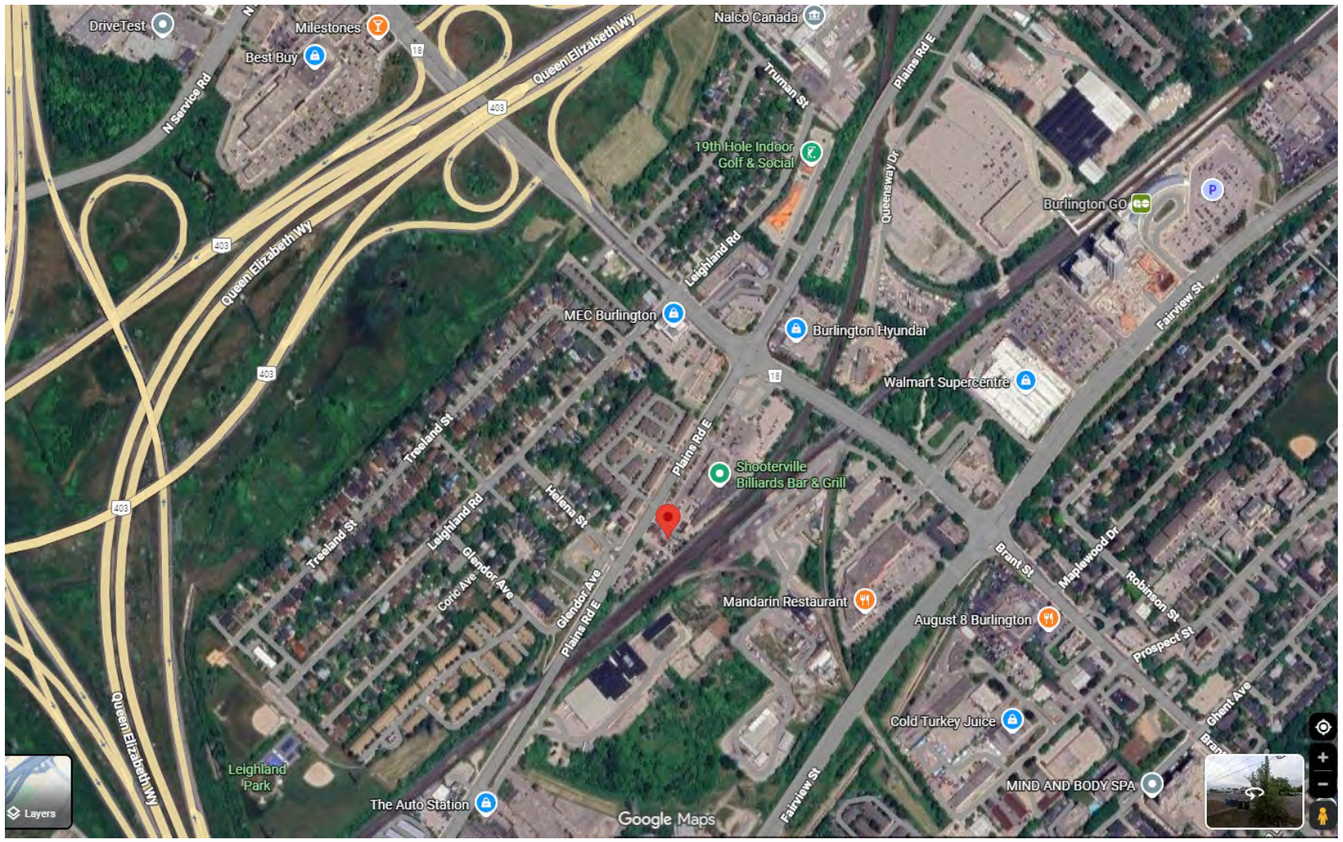
From: Iouri Basmanov <IBasmanov@hgcacoustics.com>
Sent: December 15, 2025 4:28 PM
To: Rail Data Requests <RailDataRequests@metrolinx.com>
Subject: FW: Rail data request - 25 Liberty Street

EXTERNAL SENDER: Do not click any links or open any attachments unless you trust the sender and know the content is safe.
EXPÉDITEUR EXTERNE: Ne cliquez sur aucun lien et n'ouvrez aucune pièce jointe à moins qu'ils ne proviennent d'un expéditeur fiable, ou que vous ayez l'assurance que le contenu provient d'une source sûre.

Good morning,

We are working on a project located at 1376 Plains Road East, in Burlington, located here:

https://maps.app.goo.gl/vpmH8jUf1Av378vU9



Can you please provide the following data for this location for the Oakville Subdivision (and the Halton Subdivision and the spur lines to the south of the site, if applicable) to assist us in completing our noise study?

- Growth rate per annum for a 10-year period
- Day and night train volumes for both rail corridors to the north and to the south
- Average number of cars per train
- Number of locomotives per train
- Maximum permissible speed

- Type of track (continuously welded, or jointed)

Many thanks,

Iouri Basmanov, P.Eng., INCE
Lead Engineer

HGC NOISE VIBRATION ACOUSTICS
2000 Argentia Road, Plaza One, Suite 203, Mississauga, Ontario, Canada L5N 1P7
t: 905-826-4044 x268 **e**: ibasmanov@hgcacoustics.com
Visit our website – www.hgcacoustics.com **Follow Us** – LinkedIn | X | YouTube

This e-mail and any attachments may contain confidential and privileged information. If you are not the intended recipient, please notify the sender immediately by return e-mail, delete this e-mail and destroy any copies. Any dissemination or use of this information by a person other than the intended recipient is unauthorized and may be illegal. The content of this email and any attachments prepared by HGC Noise Vibration Acoustics have limitations.

This e-mail is intended only for the person or entity to which it is addressed. If you received this in error, please contact the sender and delete all copies of the e-mail together with any attachments.

System Engineering
Engineering Services

1 Administration Road
Concord, ON, L4K 1B9
T: 905.669.3264
F: 905.760.3406

Train Count Data

TRANSMITTAL

To: *Destinataire :*	**HGC Noise Vibration Acoustics** 2000 Argentia Road, Plaza One, Suite 203, Mississauga, Ontario, Canada L5N 1P7	*Project :*	OAK-32.23-Plains Rd E, Burlington ON
Att'n:	Victor Garcia	*Routing:*	vgarcia@hgcacoustics.com
From: *Expéditeur :*	Sarangan Srikanth	*Date:*	2025/03/27
Cc:	Adjacent Development CN via e-mail		

☐ Urgent ☐ For Your Use ☐ For Review ■ For Your Information ☐ Confidential

Re: Train Traffic Data – CN Oakville Subdivision near Plains Rd E in Burlington, ON

Please find attached the requested Train Traffic Data; this data does not reflect GO Metrolinx Traffic. The application fee in the amount of **$500.00** +HST will be invoiced.

Should you have any questions, please do not hesitate to contact the undersigned at sarangan.srikanth@cn.ca.

Sincerely,

Sarangan Srikanth

Sarangan Srikanth
Officer Public Works – Eastern Canada
sarangan.srikanth@cn.ca

Dear Victor:

Re: Train Traffic Data – CN Oakville Subdivision near Plains Rd E in Burlington, ON

The following is provided in response to Victor's 2025/01/17 request for information regarding rail traffic in the vicinity of 1335 – 1355 Plains Rd E in Burlington in Burlington at approximately Mile 32.23 on CN's Oakville Subdivision.

Typical daily traffic volumes are recorded below. However, traffic volumes may fluctuate due to overall economic conditions, varying traffic demands, weather conditions, track maintenance programs, statutory holidays and traffic detours that when required may be heavy although temporary. For the purpose of noise and vibration reports, train volumes must be escalated by 2.5% per annum for a 10-year period.

Typical daily traffic volumes at this site location are as follows:

***Maximum train speed is given in Miles per Hour**

	0700-2300			
Type of Train	Volumes	Max.Consist	Max. Speed	Max. Power
Freight	0	140	60	4
Way Freight	4	25	60	4
Passenger	14	10	80	2

	2300-0700			
Type of Train	Volumes	Max.Consist	Max. Speed	Max. Power
Freight	0	140	60	4
Way Freight	2	25	60	4
Passenger	0	10	80	2

The volumes recorded reflect westbound and eastbound freight and passenger operations on CN's Oakville Subdivision.

Except where anti-whistling bylaws are in effect, engine-warning whistles and bells are normally sounded at all at-grade crossings. There is no at-grade crossing in the immediate vicinity of the study area. Please note that engine warning whistles may be sounded in cases of emergency, as a safety and or warning precaution at station locations and pedestrian crossings and occasionally for operating requirements.

With respect to equipment restrictions, the gross weight of the heaviest permissible car is 286,000 lbs.

The double mainline track is considered to be continuously welded rail throughout the study area. The presence of four (4) switches located at Mile 30.74, 30.59, 30.57 and 30.48 may exacerbate the noise and vibration caused by train movements.

The Canadian National Railway continues to be strongly opposed to locating developments near railway facilities and rights-of-way due to potential safety and environmental conflicts. Development adjacent to the Railway Right-of-Way is not appropriate without sound impact mitigation measures to reduce the incompatibility. For confirmation of the applicable rail noise, vibration and safety standards, Adjacent Development, Canadian National Railway Properties at Proximity@cn.ca should be contacted directly.

I trust the above information will satisfy your current request.

Sincerely,

Sarangan Srikanth

Sarangan Srikanth
Officer Public Works – Eastern Canada
sarangan.srikanth@cn.ca

Victor Garcia

From: Umair Naveed <Umair.Naveed@cn.ca> on behalf of GLD-Permits <permits.gld@cn.ca>
Sent: July 15, 2020 10:30 AM
To: Victor Garcia
Subject: RE: Rail traffic data request

Good Morning Victor,

The train count data is still valid. On the Oakville sub the mileage and the crossings in vicinity would be the same but for Halton the mileage would be 49.21 with no at grade crossings in the vicinity.

Thanks,

Umair Naveed
Project Officer- Public Works | Eastern Canada Division of Engineering
T: **905-669-3184** C: **416-436-7930**

Celebrating 100 years | Célébrons nos 100 ans

From: Victor Garcia <vgarcia@hgcengineering.com>
Sent: Monday, July 13, 2020 5:44 PM
To: GLD-Permits <permits.gld@cn.ca>
Subject: Rail traffic data request

Good evening,

HGC Engineering is conducting a noise impact study at a site located at 2089-2095 Fairview Street in Burlington, Ontario. A google link is included for your reference:

https://goo.gl/maps/qjgRPEHCn3cX3PYa9

We currently have the data attached for the two CN lines in the area, is this data still valid?

Thanks,

Victor Garcia, P.Eng
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**: vgarcia@hgcengineering.com
Visit our website – www.hgcengineering.com **Follow Us** – LinkedIn | Twitter | YouTube

This e-mail and any attachments may contain confidential and privileged information. If you are not the intended recipient, please notify the sender immediately by return e-mail, delete this e-mail and destroy any copies. Any

System Engineering
Engineering Services

1 Administration Road
Concord, ON, L4K 1B9
T: 905.669.3264
F: 905.760.3406

Train Count Data

TRANSMITTAL

To: *Destinataire :*	HGC Engineering 2000 Argentia Rd, Plaza One, Suite 203, Mississauga, ON L5N 1P7	*Project :*	HAL-45.17- Upper Middle Rd, Burlington, ON
Att'n:	Victor Garcia	*Routing:*	vgarcia@hgcengineering.com
From: *Expéditeur :*	Michael Vallins	*Date:*	02/05/2019
Cc:	Adjacent Development CN via e-mail		

☐ Urgent ☐ For Your Use ☐ For Review ■ For Your Information ☐ Confidential

Re: Train Traffic Data – CN Halton Subdivision near Upper Middle Road in Burlington, ON

Please find attached the requested Train Traffic Data; this data does not reflect GO Metrolinx Traffic. The application fee in the amount of **$500.00** +HST will be invoiced.

Should you have any questions, please do not hesitate to contact the undersigned at 905-669-3264.

Sincerely,
CN Design & Construction

Michael Vallins P.Eng
Manager of Public Works
public_works_gld@cn.ca

Date: 2019/02/05 Project Number: HAL-45.17- Upper Middle Rd, Burlington, ON

Dear Victor:

Re: Train Traffic Data – CN Halton Subdivision near Upper Middle Road in Burlington, ON

The following is provided in response to Victor's 2018/12/18 request for information regarding rail traffic in the vicinity of Plains Road in Burlington, ON at approximately Mile 32.23 on CN's Halton Subdivision.

Typical daily traffic volumes are recorded below. However, traffic volumes may fluctuate due to overall economic conditions, varying traffic demands, weather conditions, track maintenance programs, statutory holidays and traffic detours that when required may be heavy although temporary. For the purpose of noise and vibration reports, train volumes must be escalated by 2.5% per annum for a 10-year period.

Typical daily traffic volumes at this site location are as follows:

***Maximum train speed is given in Miles per Hour**

	0700-2300			
Type of Train	Volumes	Max.Consist	Max. Speed	Max. Power
Freight	10	140	50	4
Way Freight	2	25	50	4
Passenger	0	10	50	2

	2300-0700			
Type of Train	Volumes	Max.Consist	Max. Speed	Max. Power
Freight	4	140	50	4
Way Freight	0	25	50	4
Passenger	0	10	50	2

The volumes recorded reflect westbound and eastbound freight and passenger operations on CN's Halton Subdivision.

Except where anti-whistling bylaws are in effect, engine-warning whistles and bells are normally sounded at all at-grade crossings. There is one (1) at-grade crossing in the immediate vicinity of the study area at Mile 46.16 (Mainway Drive). Anti-whistling bylaws are not in effect at this crossing. Please note that engine warning whistles may be sounded in cases of emergency, as a safety and or warning precaution at station locations and pedestrian crossings and occasionally for operating requirements.

With respect to equipment restrictions, the gross weight of the heaviest permissible car is 286,000 lbs.

The double mainline track is considered to be continuously welded rail throughout the study area.

The Canadian National Railway continues to be strongly opposed to locating developments near railway facilities and rights-of-way due to potential safety and environmental conflicts. Development adjacent to the Railway Right-of-Way is not appropriate without sound impact mitigation measures to reduce the incompatibility. For confirmation of the applicable rail noise, vibration and safety standards, Adjacent Development, Canadian National Railway Properties at Proximity@cn.ca should be contacted directly.

I trust the above information will satisfy your current request.

Sincerely,

Michael Vallins P.Eng
Manager of Public Works
public_works_gld@cn.ca

Iouri Basmanov

From: Iouri Basmanov
Sent: January 6, 2026 3:30 PM
To: GLD-Permits
Cc: Proximity
Subject: FW: Rail data request - 1376 Plains Road East, Burlington

Good afternoon,

Following up on the request below.

Thank you!

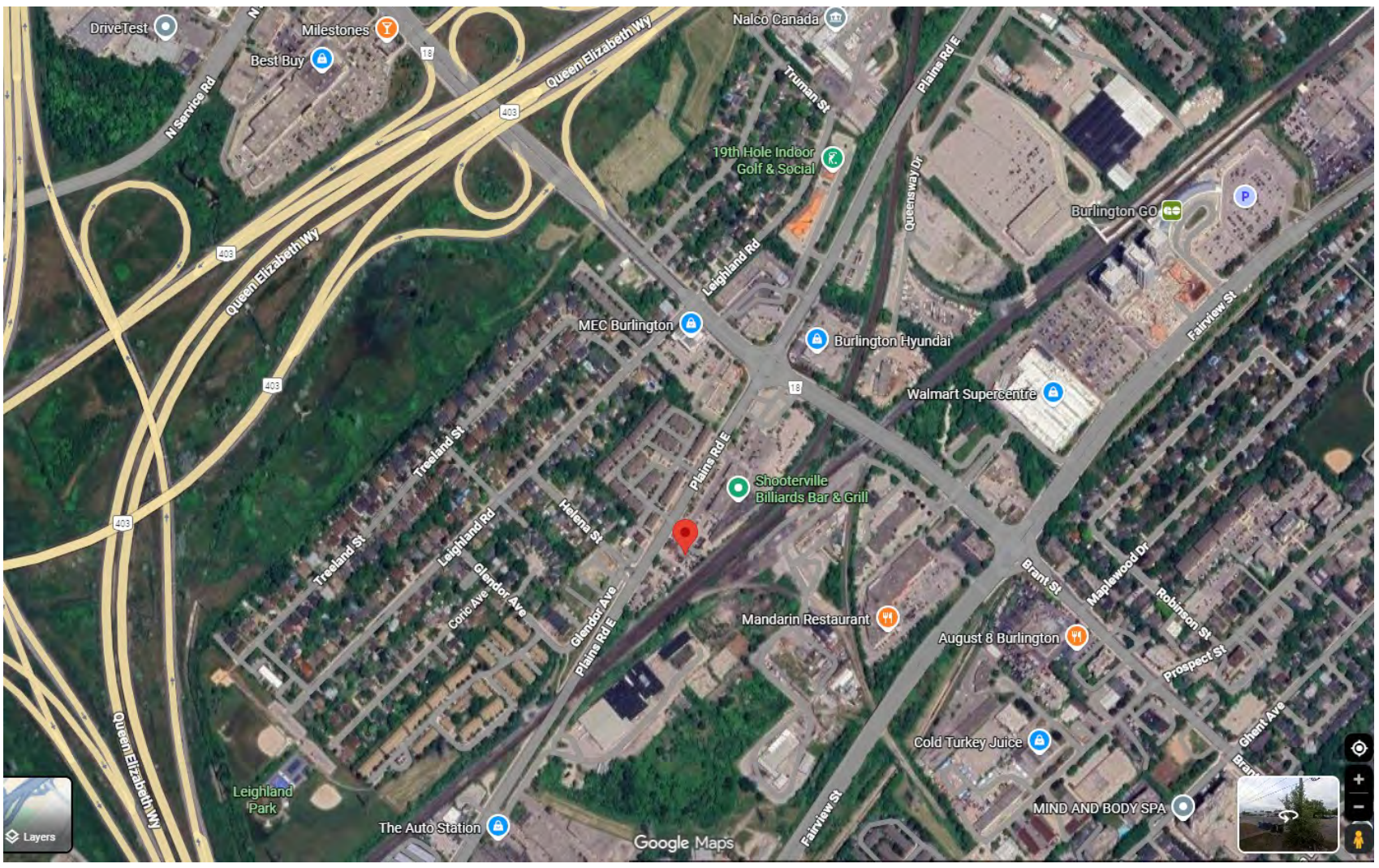
Iouri Basmanov, P.Eng., INCE
Lead Engineer
HGC NOISE VIBRATION ACOUSTICS
t: 905-826-4044 x268 **e**: ibasmanov@hgcacoustics.com

The content of this email and any attachments prepared by HGC Noise Vibration Acoustics have limitations.

From: Iouri Basmanov
Sent: Monday, December 15, 2025 4:03 PM
To: GLD-Permits <permits.gld@cn.ca>
Cc: Proximity <proximity@cn.ca>
Subject: FW: Rail data request - 1056 Brant Street, Burlington

Good afternoon,

We are working on a project located at 1376 Plains Road East, in Burlington, located here:



https://maps.app.goo.gl/vpmH8jUf1Av378vU9

Can you please provide the following data for this location for the Halton Subdivision (and the Oakville Subdivision, if applicable) to assist us in completing our noise study?

- Growth rate per annum for a 10-year period
- Day and night train volumes
- Average number of cars per train
- Number of locomotives per train
- Maximum permissible speed
- Type of track (continuously welded, or jointed)

Thank you in advance,

Iouri Basmanov, P.Eng., INCE
Lead Engineer

HGC NOISE VIBRATION ACOUSTICS
2000 Argentia Road, Plaza One, Suite 203, Mississauga, Ontario, Canada L5N 1P7
t: 905-826-4044 x268 **e**: ibasmanov@hgcacoustics.com
Visit our website – www.hgcacoustics.com **Follow Us** – LinkedIn | X | YouTube

Appendix C:

STAMSON and STEAM Calibration Outputs

STAMSON 5.0 NORMAL REPORT Date: 10-04-2026 17:47:16
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: road_c~1.te Time Period: Day/Night 16/8 hours
Description:

Road data, segment # 1: Plains Road East (day/night)

Car traffic volume : 19159/2129 veh/TimePeriod
Medium truck volume : 274/30 veh/TimePeriod
Heavy truck volume : 274/30 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Plains Road East (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 : 15.00 / 15.00 m
Receiver height : 1.50 / 1.50 m
Topography : 0 (Define your own alpha.)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 0.00 m
Barrier receiver distance : 10.00 / 10.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Alpha : 0.00
Reference angle : 0.00

↑
Road data, segment # 2: Brant St (day/night)

Car traffic volume : 47520/5280 veh/TimePeriod
Medium truck volume : 990/110 veh/TimePeriod
Heavy truck volume : 990/110 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Brant St (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  :  15.00 / 15.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      0       (Define your own alpha.)
Barrier angle1            : -90.00 deg   Angle2 : 90.00 deg
Barrier height            :   0.00 m
Barrier receiver distance :  10.00 / 10.00  m
Source elevation          :   0.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Alpha                     :   0.00
Reference angle           :   0.00
```

↟

```
Road data, segment # 3: Fairview Street (day/night)
---------------------------------------------------
Car traffic volume  : 34372/3819  veh/TimePeriod
Medium truck volume :   716/80    veh/TimePeriod
Heavy truck volume  :   716/80    veh/TimePeriod
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 3: Fairview Street (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  :  15.00 / 15.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      0       (Define your own alpha.)
Barrier angle1            : -90.00 deg   Angle2 : 90.00 deg
Barrier height            :   0.00 m
Barrier receiver distance :  10.00 / 10.00  m
Source elevation          :   0.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Alpha                     :   0.00
Reference angle           :   0.00
```

↟

```
Road data, segment # 4: Highway 403 (day/night)
-----------------------------------------------
Car traffic volume  : 152048/30083 veh/TimePeriod
Medium truck volume : 12671/2507  veh/TimePeriod
Heavy truck volume  : 38012/7521  veh/TimePeriod
Posted speed limit  :   100 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)
```

```
Data for Segment # 4: Highway 403 (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  :  15.00 / 15.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      0       (Define your own alpha.)
Barrier angle1            : -90.00 deg   Angle2 : 90.00 deg
Barrier height            :   0.00 m
Barrier receiver distance :  10.00 / 10.00  m
Source elevation          :   0.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Alpha                     :   0.00
Reference angle           :   0.00

↑
Road data, segment # 5: QEW (day/night)
---------------------------------------
Car traffic volume  : 124111/19051 veh/TimePeriod
Medium truck volume : 10343/1588  veh/TimePeriod
Heavy truck volume  : 31028/4763  veh/TimePeriod
Posted speed limit  :   100 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 5: QEW (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  :  15.00 / 15.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      0       (Define your own alpha.)
Barrier angle1            : -90.00 deg   Angle2 : 90.00 deg
Barrier height            :   0.00 m
Barrier receiver distance :  10.00 / 10.00  m
Source elevation          :   0.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Alpha                     :   0.00
Reference angle           :   0.00

↑
Results segment # 1: Plains Road East (day)
-------------------------------------------
```

Source height = 1.09 m

ROAD (0.00 + 67.88 + 0.00) = 67.88 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	67.88	0.00	0.00	0.00	0.00	0.00	0.00	67.88

Segment Leq : 67.88 dBA

Results segment # 2: Brant St (day)

Source height = 1.19 m

ROAD (0.00 + 72.68 + 0.00) = 72.68 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	72.68	0.00	0.00	0.00	0.00	0.00	0.00	72.68

Segment Leq : 72.68 dBA

Results segment # 3: Fairview Street (day)

Source height = 1.19 m

ROAD (0.00 + 69.59 + 0.00) = 69.59 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	69.59	0.00	0.00	0.00	0.00	0.00	0.00	69.59

Segment Leq : 69.59 dBA

Results segment # 4: Highway 403 (day)

Source height = 2.08 m

ROAD (0.00 + 89.40 + 0.00) = 89.40 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	89.40	0.00	0.00	0.00	0.00	0.00	0.00	89.40

Segment Leq : 89.40 dBA

↟
Results segment # 5: QEW (day)

Source height = 2.08 m

ROAD (0.00 + 88.52 + 0.00) = 88.52 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	88.52	0.00	0.00	0.00	0.00	0.00	0.00	88.52

Segment Leq : 88.52 dBA

Total Leq All Segments: 92.08 dBA

↟
Results segment # 1: Plains Road East (night)

Source height = 1.09 m

ROAD (0.00 + 61.35 + 0.00) = 61.35 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	61.35	0.00	0.00	0.00	0.00	0.00	0.00	61.35

Segment Leq : 61.35 dBA

↟
Results segment # 2: Brant St (night)

Source height = 1.19 m

ROAD (0.00 + 66.14 + 0.00) = 66.14 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	66.14	0.00	0.00	0.00	0.00	0.00	0.00	66.14

Segment Leq : 66.14 dBA

↟
Results segment # 3: Fairview Street (night)

Source height = 1.19 m

ROAD (0.00 + 63.06 + 0.00) = 63.06 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	63.06	0.00	0.00	0.00	0.00	0.00	0.00	63.06

Segment Leq : 63.06 dBA

↟
Results segment # 4: Highway 403 (night)

Source height = 2.08 m

ROAD (0.00 + 85.37 + 0.00) = 85.37 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	85.37	0.00	0.00	0.00	0.00	0.00	0.00	85.37

Segment Leq : 85.37 dBA

↟
Results segment # 5: QEW (night)

Source height = 2.08 m

ROAD (0.00 + 83.39 + 0.00) = 83.39 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	83.39	0.00	0.00	0.00	0.00	0.00	0.00	83.39

Segment Leq : 83.39 dBA

Total Leq All Segments: 87.56 dBA

↟

TOTAL Leq FROM ALL SOURCES (DAY): 92.08
(NIGHT): 87.56

↟

Filename: cnhalt.te Time Period: Day/Night 16/8 hours
Description:

Rail data, segment # 1: CN Freight (day/night)

Train Type	Trains	Speed (km/h)	# loc /Train	# Cars /Train	Eng type	Cont weld
1. CN FREIGHT	15.0/6.0	80.0	4.0	140.0	Diesel	Yes

Data for Segment # 1: CN Freight (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	15.00 / 15.00	m
Receiver height	1.50 / 1.50	m
Topography	0	(Define your own alpha.)
No Whistle		
Barrier angle1	-90.00 deg	Angle2 : 90.00 deg
Barrier height	0.00 m	
Barrier receiver distance	0.10 / 0.10	m
Source elevation	2.50 m	
Receiver elevation	0.00 m	
Barrier elevation	0.00 m	
Alpha	0.00	
Reference angle	0.00	

Rail data, segment # 2: CN WayFreigh (day/night)

Train Type	Trains	Speed (km/h)	# loc /Train	# Cars /Train	Eng type	Cont weld
1.	3.0/1.0	80.0	4.0	25.0	Diesel	Yes

Data for Segment # 2: CN WayFreigh (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	15.00 / 15.00	m
Receiver height	1.50 / 4.50	m
Topography	2	(Flat/gentle slope; with barrier)
No Whistle		
Barrier angle1	-90.00 deg	Angle2 : 90.00 deg
Barrier height	3.00 m	

Barrier receiver distance : 10.00 / 10.00 m
Source elevation   :   0.00 m
Receiver elevation   :   0.00 m
Barrier elevation   :   0.00 m
Reference angle   :   0.00

🡅
Results segment # 1: CN Freight (day)

LOCOMOTIVE (0.00 + 74.68 + 0.00) = 74.68 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	74.68	0.00	0.00	0.00	0.00	0.00	74.68

WHEEL (0.00 + 68.08 + 0.00) = 68.08 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	68.08	0.00	0.00	0.00	0.00	0.00	68.08

Segment Leq : 75.54 dBA

🡅
Results segment # 2: CN WayFreigh (day)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	1.50	3.17	3.17
0.50	1.50	0.83	0.83

LOCOMOTIVE (0.00 + 62.05 + 0.00) = 62.05 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.41	63.38	0.00	-0.99	0.00	0.00	-4.86	57.53*
-90	90	0.58	63.38	0.00	-1.33	0.00	0.00	0.00	62.05

 * Bright Zone !

WHEEL (0.00 + 40.66 + 0.00) = 40.66 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.51	54.13	0.00	-1.19	0.00	0.00	-12.28	40.66

Segment Leq : 62.08 dBA

Total Leq All Segments: 75.73 dBA

↟
Results segment # 1: CN Freight (night)

LOCOMOTIVE (0.00 + 73.72 + 0.00) = 73.72 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	73.72	0.00	0.00	0.00	0.00	0.00	73.72

WHEEL (0.00 + 67.11 + 0.00) = 67.11 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	67.11	0.00	0.00	0.00	0.00	0.00	67.11

Segment Leq : 74.58 dBA

↟
Results segment # 2: CN WayFreigh (night)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	4.50	4.17	4.17
0.50	4.50	1.83	1.83

LOCOMOTIVE (0.00 + 60.46 + 0.00) = 60.46 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.31	61.62	0.00	-0.80	0.00	0.00	-0.43	60.39*
-90	90	0.50	61.62	0.00	-1.17	0.00	0.00	0.00	60.46

* Bright Zone !

WHEEL (0.00 + 42.74 + 0.00) = 42.74 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.42	52.37	0.00	-1.02	0.00	0.00	-8.61	42.74

Segment Leq : 60.53 dBA

Total Leq All Segments: 74.75 dBA

↟

TOTAL Leq FROM ALL SOURCES (DAY): 75.73
(NIGHT): 74.75

↟
↟

STAMSON 5.0 NORMAL REPORT Date: 10-04-2026 17:48:42
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: cnoak.te Time Period: Day/Night 16/8 hours
Description:

Rail data, segment # 1: CN WayFreigh (day/night)

Train Type	Trains	Speed (km/h)	# loc /Train	# Cars /Train	Eng type	Cont weld
1. CN FREIGHT	5.0/3.0	97.0	4.0	25.0	Diesel	Yes

Data for Segment # 1: CN WayFreigh (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	: 15.00 / 15.00	m
Receiver height	: 1.50 / 1.50	m
Topography	: 0	(Define your own alpha.)
No Whistle		
Barrier angle1	: -90.00 deg	Angle2 : 90.00 deg
Barrier height	: 0.00	m
Barrier receiver distance	: 0.10 / 0.10	m
Source elevation	: 2.50	m
Receiver elevation	: 0.00	m
Barrier elevation	: 0.00	m
Alpha	: 0.00	
Reference angle	: 0.00	

↟

Results segment # 1: CN WayFreigh (day)

LOCOMOTIVE (0.00 + 66.73 + 0.00) = 66.73 dBA

```
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.00  66.73   0.00   0.00   0.00   0.00   0.00  66.73
-------------------------------------------------------------------

WHEEL (0.00 + 57.67 + 0.00) = 57.67 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.00  57.67   0.00   0.00   0.00   0.00   0.00  57.67
-------------------------------------------------------------------

Segment Leq : 67.24 dBA

Total Leq All Segments: 67.24 dBA

↟
Results segment # 1: CN WayFreigh (night)
-----------------------------------------

LOCOMOTIVE (0.00 + 67.52 + 0.00) = 67.52 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.00  67.52   0.00   0.00   0.00   0.00   0.00  67.52
-------------------------------------------------------------------

WHEEL (0.00 + 58.46 + 0.00) = 58.46 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.00  58.46   0.00   0.00   0.00   0.00   0.00  58.46
-------------------------------------------------------------------

Segment Leq : 68.03 dBA

Total Leq All Segments: 68.03 dBA

↟



TOTAL Leq FROM ALL SOURCES (DAY): 67.24
                           (NIGHT): 68.03
↟
↟
```

Appendix D:

Environmental Registry Information

CONTENT COPY OF ORIGINAL

Ontario

Ministry of the Environment | **Ministère de l'Environnement**

AMENDMENT TO CERTIFICATE OF APPROVAL
AIR
NUMBER 8-300-064-77-776
Notice No. 1

BetzDearborn Canada Inc. and Hercules Canada Inc.
o/a Hercules Canada
942 Brant Street, P.O. Box 100
Burlington, Ontario
L7R 3X8

Site Location: 942 Brant Street
Burlington City, Regional Municipality of Halton, Ontario

You are hereby notified that I have amended Certificate of Approval No. 8-300-064-77-776 issued on April 4, 1977 for an oil fired Dowtherm Vapourizer, as follows:

The name of the Company has changed:

FROM: Hercules Canada Limited

TO: BetzDearborn Canada Inc. and Hercules Canada Inc.
o/a Hercules Canada

All in accordance with the letter dated October 25, 2000 from Dean Fisher, Environmental Specialist, Hercules Canada.

This Notice shall constitute part of the approval issued under Certificate of Approval No. 8-300-064-77-776 dated April 4, 1977.

In accordance with Section 139 of the Environmental Protection Act, R.S.O. 1990, Chapter E-19, as amended, you may by written notice served upon me and the Environmental Appeal Board within 15 days after receipt of this Notice, require a hearing by the Board. Section 142 of the Environmental Protection Act, provides that the Notice requiring the hearing shall state:

1. The portions of the approval or each term or condition in the approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The Certificate of Approval number;
6. The date of the Certificate of Approval;
7. The name of the Director;
8. The municipality within which the works are located;

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

CONTENT COPY OF ORIGINAL

The Secretary*
Environmental Appeal Board
2300 Yonge St., 12th Floor
P.O. Box 2382
Toronto, Ontario
M4P 1E4

AND

The Director
Section 9, *Environmental Protection Act*
Ministry of the Environment
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

*** Further information on the Environmental Appeal Board's requirements for an appeal can be obtained directly from the Board at: Tel: (416) 314-4600, Fax: (416) 314-4506 or www.ert.gov.on.ca**

The above noted works are approved under Section 9 of the Environmental Protection Act

DATED AT TORONTO this 8th day of December, 2000

Yvonne Hall, P.Eng.
Director
Section 9, *Environmental Protection Act*

NB/
c: District Manager, MOE Halton-Peel

AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER 9319-CNTR4D
Issue Date: February 17, 2023

Sun Chemical Limited
10 West Drive
Brampton, Ontario
L6T 4Y4

Site Location: 10 West Drive
Brampton City, Regional Municipality of Peel
L6T 4Y4

You have applied under section 20.2 of Part II.1 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:

An ink manufacturing facility, consisting of the following processes and support units:

- tank filling, storage and dispensing;
- gathering and weighing;
- premixing;
- milling;
- mixing and blending;
- quality control testing;
- research and development testing;
- packaging; and
- cleaning;

including the Equipment and any other ancillary and support processes and activities, operating at a Facility Production Limit of up to 28,500 tonnes of product per day discharging to the air as described in the Original ESDM Report.

For the purpose of this environmental compliance approval, the following definitions apply:

1. "ACB list" means the document entitled “Air Contaminants Benchmarks (ACB) List: Standards, guidelines and screening levels for assessing point of impingement concentrations of air contaminants”, as amended from time to time and published by the Ministry and available on a Government website;

2. "Acceptable Point of Impingement Concentration" means a concentration accepted by the Ministry as not likely to cause an adverse effect for a Compound of Concern that,

   a. is not identified in the ACB list, or

   b. is identified in the ACB list as belonging to the category “Benchmark 2” and has a concentration at a Point of Impingement that exceeds the concentration set out for the contaminant in that document.

   With respect to the Original ESDM Report, the Acceptable Point of Impingement Concentration for a Compound of Concern mentioned above is the concentration set out in the Original ESDM Report;

3. "Approval" means this entire Environmental Compliance Approval and any Schedules to it.;

4. "Basic Comprehensive User Guide" means the Ministry document titled "Basic Comprehensive Certificates of Approval (Air) User Guide” dated March 2011, as amended;

5. "Company" means Sun Chemical Limited that is responsible for the construction or operation of the Facility and includes any successors and assigns in accordance with section 19 of the EPA;

6. "Compound of Concern" means a contaminant described in paragraph 4 subsection 26 (1) of O. Reg. 419/05, namely, a contaminant that is discharged from the Facility in an amount that is not negligible;

7. "Description Section" means the section on page one of this Approval describing the Company's operations and the Equipment located at the Facility and specifying the Facility Production Limit for the Facility;

8. "Director" means a person appointed for the purpose of section 20.3 of the EPA by the Minister pursuant to section 5 of the EPA;

9. "District Manager" means the District Manager of the appropriate local district office of the Ministry, where the Facility is geographically located;

10. "Emission Summary Table" means a table described in paragraph 14 of subsection 26 (1) of O. Reg. 419/05;

11. "Environmental Assessment Act" means the *Environmental Assessment Act,* R.S.O. 1990, c.E.18;

12. "EPA" means the *Environmental Protection Act,* R.S.O. 1990, c.E.19;

13. "Equipment" means equipment or processes described in the ESDM Report, this Approval and in the Schedules referred to herein and any other equipment or processes;

14. "Equipment with Specific Operational Limits" means any Equipment related to the thermal oxidation of waste or waste derived fuels, fume incinerators or any other Equipment that is specifically referenced in any published Ministry document that outlines specific operational guidance that must be considered by the Director in issuing an Approval;

15. "ESDM Report" means the most current Emission Summary and Dispersion Modelling Report that describes the Facility. The ESDM Report is based on the Original ESDM Report and is updated after the issuance of this Approval in accordance with section 26 of O. Reg. 419/05 and the Procedure Document;

16. "Facility" means the entire operation located on the property where the Equipment is located;

17. "Facility Production Limit" means the production limit placed by the Director on the main product(s) or raw materials used by the Facility;

18. "Highest Ranking Person" means the highest ranking person regularly present at the Facility who has management responsibilities relating to the Facility;

19. "Log" means a document that contains a record of each change that is required to be made to the ESDM Report, including the date on which the change occurred. For example, a record would have to be made of a more accurate emission rate for a source of contaminant, more accurate meteorological data, a more accurate value of a parameter that is related to a source of contaminant, a change to a Point of Impingement and all changes to information associated with a Modification to the Facility that satisfies Condition 2;

20. "Minister" means the Minister of the Environment, Conservation and Parks or such other member of the Executive Council as may be assigned the administration of the EPA under the Executive Council Act;

21. "Ministry" means the ministry of the Minister;

22. "Modification" means any construction, alteration, extension or replacement of any plant, structure, equipment, apparatus, mechanism or thing, or alteration of a process or rate of production at the Facility that may discharge or alter the rate or manner of discharge of a Compound of Concern to the air or discharge or alter noise or vibration emissions from the Facility;

23. "Noise Screening Documents" means the completed Primary Noise Screening Method and the supporting information and documentation;

24. "O. Reg. 419/05" means Ontario Regulation 419/05: Air Pollution – Local Air Quality, made under the EPA;

25. "Original ESDM Report" means the Emission Summary and Dispersion Modelling Report which was prepared in accordance with section 26 of O. Reg. 419/05 and the Procedure Document by Harvey Watson / R.J. Burnside & Associates Limited and dated October 2021 submitted in support of the application, and includes any changes to the report made up to the date of issuance of this Approval;

26. "Point of Impingement" has the same meaning as in section 2 of O. Reg. 419/05;

27. "Primary Noise Screening Method" means the Ministry Primary Noise Screening Method form as described in the "Primary Noise Screening Method Guide", January 31, 2017, as amended;

28. "Procedure Document" means Ministry guidance document titled "Procedure for Preparing an Emission Summary and Dispersion Modelling Report" dated March 2018, as amended;

29. "Processes with Significant Environmental Aspects" means the Equipment which, during regular operation, would discharge one or more contaminants into the air in an amount which is not considered as negligible in accordance with section 26 (1) 4 of O. Reg. 419/05 and the Procedure Document;

30. "Publication NPC-207" means the Ministry draft technical publication "Impulse Vibration in Residential Buildings", November 1983, supplementing the Model Municipal Noise Control By-Law, Final Report, published by the Ministry, August 1978, as amended;

31. "Publication NPC-300" means the Ministry Publication NPC-300, “Environmental Noise Guideline, Stationary and Transportation Sources – Approval and Planning, Publication NPC-300”, August 2013, as amended;

32. "Schedules" means the following schedules attached to this Approval and forming part of this Approval namely:

    - Schedule A - Supporting Documentation

33. "Toxicologist" means a qualified professional currently active in the field of risk assessment and toxicology that has a combination of formal university education, training and experience necessary to assess contaminants; and

34. "Written Summary Form" means the electronic questionnaire form, available on the Ministry website, that documents whether Modifications were undertaken at the Facility and compliance with the Approval, in the previous calendar year.

You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. GENERAL

1. Except as otherwise provided by this Approval, the Facility shall be designed, developed, built, operated and maintained in accordance with the terms and conditions of this Approval and in accordance with the following Schedules attached hereto:

   - Schedule A - Supporting Documentation

2. LIMITED OPERATIONAL FLEXIBILITY

1. Pursuant to section 20.6 (1) of the EPA and subject to Conditions 2.2 and 2.3 of this Approval, future construction, alterations, extensions or replacements are approved in this Approval if the future construction, alterations, extensions or replacements are Modifications to the Facility that:

   a. are within the scope of the operations of the Facility as described in the Description Section of this Approval;

   b. do not result in an increase of the Facility Production Limit above the level specified in the Description Section of this Approval; and

   c. result in compliance with the performance limits as specified in Condition 4.

2. Condition 2.1 does not apply to,

   a. the addition of any new Equipment with Specific Operational Limits or to the Modification of any existing Equipment with Specific Operational Limits at the Facility; and

   b. Modifications to the Facility that would be subject to the Environmental Assessment Act.

3. Condition 2.1 of this Approval shall expire ten (10) years from the date of this Approval, unless this Approval is revoked prior to the expiry date. The Company may apply for renewal of Condition 2.1 of this Approval by including an ESDM Report that describes the Facility as of the date of the renewal application.

3. REQUIREMENT TO REQUEST AN ACCEPTABLE POINT OF IMPINGEMENT CONCENTRATION

1. Prior to making a Modification to the Facility that satisfies Condition 2.1.a and 2.1.b, the Company shall prepare a proposed update to the ESDM Report to reflect the proposed Modification.

2. The Company shall request approval of an Acceptable Point of Impingement Concentration for a Compound of Concern if the Compound of Concern is not identified in the ACB list as belonging to the category "Benchmark 1" and a proposed update to an ESDM Report indicates that one of the following changes with respect to the concentration of the Compound of Concern may occur:

   a. The Compound of Concern was not a Compound of Concern in the previous version of the ESDM Report and

      i. the concentration of the Compound of Concern exceeds the concentration set out for the contaminant in the ACB list; or

      ii. the Compound of Concern is not identified in the ACB list; or

   b. The concentration of the Compound of Concern in the updated ESDM Report exceeds the higher of,

      i. the most recent Acceptable Point of Impingement Concentration, and

      ii. the concentration set out for the contaminant in the ACB list,if the contaminant is identified in that document.

3. The request required by Condition 3.2 shall propose a concentration for the Compound of Concern and shall contain an assessment, performed by a Toxicologist, of the likelihood of the proposed concentration causing an adverse effect at Points of Impingement.

4. If the request required by Condition 3.2 is a result of a proposed Modification described in Condition 3.1, the Company shall submit the request, in writing, to the Director at least 30 days prior to commencing to make the Modification. The Director shall provide written confirmation of receipt of this request to the Company.

5. If a request is required to be made under Condition 3.2 in respect of a proposed Modification described in Condition 3.1, the Company shall not make the Modification mentioned in Condition 3.1 unless the request is approved in writing by the Director.

6. If the Director notifies the Company in writing that the Director does not approve the request, the Company shall,

    a. revise and resubmit the request; or

    b. notify the Director that it will not be making the Modification.

7. The re-submission mentioned in Condition 3.6 shall be deemed a new submission under Condition 3.2.

8. If the Director approves the request, the Company shall update the ESDM Report to reflect the Modification.

9. Condition 3 does not apply if Condition 2.1 has expired.

4. PERFORMANCE LIMITS

1. Subject to Condition 4.2, the Company shall not discharge or cause or permit the discharge of a Compound of Concern into the air if,

    a. the Compound of Concern is identified in the ACB list as belonging to the category "Benchmark 1" and the discharge results in the concentration at a Point of Impingement exceeding the Benchmark 1 concentration; or

    b. the Compound of Concern is not identified in the ACB list as belonging to the category "Benchmark 1" and the discharge results in the concentration at a Point of Impingement exceeding the higher of,

        i. if an Acceptable Point of Impingement Concentration exists, the most recent Acceptable Point of Impingement Concentration, and

        ii. the concentration set out for the contaminant in the ACB list, if the contaminant is identified in that document.

2. Condition 4.1 does not apply if the benchmark set out in the ACB list has a 10-minute averaging period and no ambient monitor indicates an exceedance at a Point of Impingement where human activities regularly occur at a time when those activities regularly occur.

3. The Company shall, at all times, ensure that the noise emissions from the Facility comply with the limits set out in Ministry Publication NPC-300.

4. The Company shall, at all times, ensure that the vibration emissions from the Facility comply with the limits set out in Ministry Publication NPC-207.

5. The Company shall operate any Equipment with Specific Operational Limits approved by this Approval in accordance with the Original ESDM Report.

5. DOCUMENTATION REQUIREMENTS

1. The Company shall maintain an up-to-date Log.

2. No later than March 31 in each year, the Company shall update the ESDM Report in accordance with section 26 of O. Reg. 419/05 and shall update the Noise Screening Documents so that the information in the reports is accurate as of December 31 in the previous year.

3. The Company shall make the Emission Summary Table (see section 27 of O. Reg. 419/05) and the Noise Screening Documents available for examination by any person, without charge, by posting it on the Internet or by making it available during regular business hours at the Facility.

4. The Company shall, within three (3) months after the expiry of Condition 2.1 of this Approval, update the ESDM Report and the Noise Screening Documents such that the information in the reports is accurate as of the date that Condition 2.1 of this Approval expired.

5. Conditions 5.1 and 5.2 do not apply if Condition 2.1 has expired.

6. WRITTEN SUMMARY FORM

1. Subject to Condition 6.2, the Company shall prepare, and make available to the Ministry upon request, no later than June 30 of each year, a Written Summary Form signed by the Highest Ranking Person.
2. Condition 6.1 does not apply if:
   a. Condition 2.1 has expired; and
   b. the Written Summary Form has been completed for the year in which Condition 2.1 expired.

7. OPERATION AND MAINTENANCE

1. The Company shall prepare and implement, not later than three (3) months from the date of this Approval, operating procedures and maintenance programs for all Processes with Significant Environmental Aspects, which shall specify as a minimum:

   a. frequency of inspections and scheduled preventative maintenance;
   b. procedures to prevent upset conditions;
   c. procedures to minimize all fugitive emissions;
   d. procedures to prevent and/or minimize odorous emissions;
   e. procedures to prevent and/or minimize noise emissions; and
   f. procedures for record keeping activities relating to the operation and maintenance programs.

2. The Company shall ensure that all Processes with Significant Environmental Aspects are operated and maintained in accordance with this Approval, the operating procedures and maintenance programs.

8. COMPLAINTS RECORDING AND REPORTING

1. If at any time, the Company receives an environmental complaint from the public regarding the operation of the Equipment approved by this Approval, the Company shall take the following steps:

    a. Record and number each complaint, either electronically or in a log book. The record shall include the following information: the time and date of the complaint and incident to which the complaint relates, the nature of the complaint, wind direction at the time and date of the incident to which the complaint relates and, if known, the address of the complainant.

    b. Notify the District Manager of the complaint within two (2) business days after the complaint is received, or in a manner acceptable to the District Manager.

    c. Initiate appropriate steps to determine all possible causes of the complaint, and take the necessary actions to appropriately deal with the cause of the subject matter of the complaint.

    d. Complete and retain on-site a report written within five (5) business days of the complaint date. The report shall list the actions taken to appropriately deal with the cause of the complaint and set out steps to be taken to avoid the recurrence of similar incidents.

9. RECORD KEEPING REQUIREMENTS

1. Any information requested by any employee in or agent of the Ministry concerning the Facility and its operation under this Approval, including, but not limited to, any records required to be kept by this Approval, shall be provided to the employee in or agent of the Ministry, upon request **,** in a timely manner.

2. Unless otherwise specified in this Approval, the Company shall retain, for a minimum of five (5) years from the date of their creation all reports, records and information described in this Approval, including,

    a. a copy of the Original ESDM Report and each updated version;

    b. supporting information used in the emission rate calculations performed in the ESDM Reports;

    c. the records in the Log;

    d. copies of each Written Summary Form prepared under Condition 6.1 of this Approval;

    e. records of maintenance, repair and inspection of Equipment related to all Processes with Significant Environmental Aspects; and

f. all records related to environmental complaints made by the public as required by Condition 8 of this Approval.

10. REVOCATION OF PREVIOUS APPROVALS

1. This Approval replaces and revokes all Certificates of Approval (Air) issued under section 9 EPA and Environmental Compliance Approvals issued under Part II.1 EPA to the Facility in regards to the activities mentioned in subsection 9(1) of the EPA and dated prior to the date of this Approval.

SCHEDULE A

Supporting Documentation

1. Environmental Compliance Approval Application, dated November 15, 2021, signed by Chris Buck, Director of Operations, Canada and submitted by the Company;
2. Emission Summary and Dispersion Modelling Report, prepared by Harvey Watson and dated October 2021;
3. An email update provided by Kerrie Martins on December 9, 2022;
4. An email update provided by Harvey Watson on December 16, 2022; and
5. The Primary Noise Screening Method, prepared by R.J. Burnside & Associates Limited, dated June 11, 2021, and signed by Kerrie Martins.

The reasons for the imposition of these terms and conditions are as follows:

1. GENERAL

Condition No. 1 is included to require the Approval holder to build, operate and maintain the Facility in accordance with the Supporting Documentation in Schedule A considered by the Director in issuing this Approval.

2. LIMITED OPERATIONAL FLEXIBILITY, REQUIREMENT TO REQUEST AN ACCEPTABLE POINT OF IMPINGEMENT CONCENTRATION AND PERFORMANCE LIMITS

Conditions No. 2, 3 and 4 are included to limit and define the Modifications permitted by this Approval, and to set out the circumstances in which the Company shall request approval of an Acceptable Point of Impingement Concentration prior to making Modifications. The holder of the Approval is approved for operational flexibility for the Facility that is consistent with the description of the operations included with the application up to the Facility Production Limit. In return for the operational flexibility, the Approval places performance based limits that cannot be exceeded under the terms of this Approval. Approval holders will still have to obtain other relevant approvals required to operate the Facility, including requirements under other environmental legislation such as the Environmental Assessment Act.

3. DOCUMENTATION REQUIREMENTS

Condition No. 5 is included to require the Company to maintain ongoing documentation that demonstrates compliance with the performance limits as specified in Condition 4 of this Approval and allows the Ministry to monitor on-going compliance with these performance limits. The Company is required to have up to date Noise Screening Documents and an up to date ESDM Report that describes the Facility at all times and make the Emission Summary Table from that report and the Noise Screening Documents available to the public on an ongoing basis in order to maintain public communication with regard to the emissions from the Facility.

4. WRITTEN SUMMARY FORM

Condition No. 6 is included to require the Company to prepare, and make available to the Ministry upon request, a yearly Written Summary Form, to assist the Ministry with the review of the site's compliance with the EPA, the regulations and this Approval.

5. OPERATION AND MAINTENANCE

Condition No. 7 is included to require the Company to properly operate and maintain the Processes with Significant Environmental Aspects to minimize the impact to the environment from these processes.

6. COMPLAINTS RECORDING AND REPORTING PROCEDURE

Condition No. 8 is included to require the Company to respond to any environmental complaints regarding the operation of the Equipment, according to a procedure that includes methods for preventing recurrence of similar incidents and a requirement to prepare and retain a written report.

7. RECORD KEEPING REQUIREMENTS

Condition No. 9 is included to require the Company to retain all documentation related to this Approval and provide access to employees in or agents of the Ministry, upon request, so that the Ministry can determine if a more detailed review of compliance with the performance limits as specified in Condition 4 of this Approval is necessary.

8. REVOCATION OF PREVIOUS APPROVALS

Condition No. 10 is included to identify that this Approval replaces all Section 9 Certificate(s) of Approval and Part II.1 Approvals in regards to the activities mentioned in subsection 9(1) of the EPA and dated prior to the date of this Approval.

Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s). 1489-9YDNV3 issued on December 10, 2015.

In accordance with Section 139 of the *Environmental Protection Act,* you may by written notice served upon me, the Ontario Land Tribunal and in accordance with Section 47 of the *Environmental Bill of Rights,* 1993, the Minister of the Environment, Conservation and Parks, within 15 days after receipt of this notice, require a hearing by the Tribunal. The Minister of the Environment, Conservation and Parks will place notice of your appeal on the Environmental Registry. Section 142 of the *Environmental Protection Act* provides that the notice requiring the hearing ("the Notice") shall state:

a. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
b. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

Pursuant to subsection 139(3) of the *Environmental Protection Act,* a hearing may not be required with respect to any terms and conditions in this environmental compliance approval, if the terms and conditions are substantially the same as those contained in an approval that is amended or revoked by this environmental compliance approval.

The Notice should also include:

1. The name of the appellant;
2. The address of the appellant;
3. The environmental compliance approval number;
4. The date of the environmental compliance approval;
5. The name of the Director, and;
6. The municipality or municipalities within which the project is to be engaged in.

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

Registrar*
Ontario Land Tribunal
655 Bay Street, Suite 1500
Toronto, Ontario
M5G 1E5
OLT.Registrar@ontario.ca

and

The Minister of the Environment,
Conservation and Parks
777 Bay Street, 5th Floor
Toronto, Ontario
M7A 2J3

and

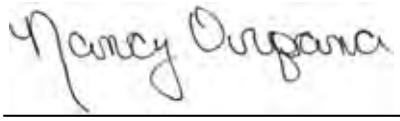
The Director appointed for the purposes of
Part II.1 of the *Environmental Protection Act*
Ministry of the Environment,
Conservation and Parks
135 St. Clair Avenue West, 1st Floor
Toronto, Ontario
M4V 1P5

*** Further information on the Ontario Land Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349 or 1 (866) 448-2248, or www.olt.gov.on.ca**

This instrument is subject to Section 38 of the *Environmental Bill of Rights,* 1993, that allows residents of Ontario to seek leave to appeal the decision on this instrument. Residents of Ontario may seek leave to appeal within 15 days from the date this decision is placed on the Environmental Registry. By accessing the Environmental Registry at https://ero.ontario.ca/, you can determine when the leave to appeal period ends.

The above noted activity is approved under s.20.3 of Part II.1 of the *Environmental Protection Act.*

DATED AT TORONTO this 17th day of February, 2023



Nancy E Orpana, P.Eng.
Director
appointed for the purposes of Part II.1 of the
Environmental Protection Act

EC/

c: District Manager, MECP Halton-Peel
Kerrie Martins, R.J. Burnside & Associates Limited

CONTENT COPY OF ORIGINAL

Ontario

Ministry of the Environment **Ministère de l'Environnement**

PROVISIONAL CERTIFICATE OF APPROVAL
WASTE MANAGEMENT SYSTEM
NUMBER 7344-74TKQC
Issue Date: July 9, 2007

Brannick-Freeman Ltd.
2127 Kerns Road
Burlington, Ontario
L7P 1P7

You have applied in accordance with Section 27 of the Environmental Protection Act for approval of:

a waste management system serving:

the Province of Ontario

For the purpose of this Provisional Certificate of Approval and the terms and conditions specified below, the following definitions apply:

a. "Certificate" means the entire Certificate of Approval including its schedules, if any, issued in accordance with Section 27 of the Environmental Protection Act;

b. "Company" means only Brannick-Freeman Ltd.;

c. "Director" means any Ministry employee appointed by the Minister pursuant to Section 5 of the Environmental Protection Act; and

d. "District Manager" means the District Manager of the Ministry of the Environment for the geographic area in which the waste described in condition 2 is located.

You are hereby notified that this approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. Except as otherwise provided by these conditions, the waste management system shall be operated in accordance with the application for this Provisional Certificate of Approval dated May 2, 2007 and with the supporting information submitted therewith.

2. Only domestic and commercial waste shall be transported pursuant to this Provisional Certificate of Approval and in any case, no subject waste may be transported pursuant to this Provisional Certificate of Approval.

3. The Company shall promptly take whatever steps are necessary to contain and clean up any spills of waste which have resulted from the operation of this waste management system.

4. Waste shall only be delivered to a waste disposal site or facility which has a Certificate of Approval or a Provisional Certificate of Approval, and only where the waste being delivered complies with the Certificate of Approval or Provisional Certificate of Approval of the receiving waste disposal site or facility, and at no time shall waste be stored or transferred to your truck storage yard located at 2127 Kerns Road, Burlington.

5. All waste shall only be transported in a covered vehicle.

6. Any addition, deletion or other change to the fleet of vehicles, trailers and equipment (i.e., year, make, model, serial number, licence number and ownership of each vehicle, trailer or piece of equipment) in particular those which are leased

or rented, shall be reported to the Director within fourteen (14) days of any such change.

7. Every vehicle used for the collection and transportation of waste pursuant to this Provisional Certificate of Approval shall be clearly marked with the company name and the number which appears on the face of the Certificate of Approval or Provisional Certificate of Approval that authorizes the collection and transportation of waste.

8. The following documents shall be with each vehicle operated pursuant to this Provisional Certificate of Approval at all times that the vehicle is being operated or contains any wastes:

(a) A copy of this Provisional Certificate of Approval; and
(b) A certificate of vehicle liability insurance specifying that it provides coverage of a minimum of one million dollars ($1,000,000.00).

9. (1) The Company shall notify the Director in writing of any of the following changes within thirty (30) days of the changes occurring:

(a) change of Company name, owner or operating authority;

(b) change of Company address or address of new owner or operating authority;

(2) In the event of any change in ownership of the waste management system the company shall notify the succeeding (new owner) company of the existence of this Certificate, and a copy of such notice shall be forwarded to the Director.

(3) The Company shall ensure that all communications made pursuant to this condition will refer to this Certificate number.

The reasons for the imposition of these terms and conditions are as follows:

1. The reason for condition 1 is to set out clearly that this waste management system is operated in accordance with the application for this Provisional Certificate of Approval and the supporting information submitted therewith and not on a basis or in any way which the Director has not been asked to consider.

2. The reason for condition 2 is to ensure that this waste management system is only used to collect, handle and transport waste which it is able to in a suitable manner as the transportation of waste which this waste management system is not able to collect, handle and transport may create a nuisance or result in a hazard to the health and safety of any person or the natural environment.

3. The reason for condition 3 is to ensure that any waste spilled onto the vehicle is promptly contained and cleaned up to minimize the risk of further spillage or the discharge of waste from the vehicle to the environment and to ensure that the proper officials of the Ministry of the Environment are notified and able to give direction to the Company to ensure the complete decontamination of the vehicle and clean up of the spilled material.

4. The reason for condition 4 is to ensure that this waste management system is used to transport waste only to waste disposal sites or facilities that have been approved by the Ministry of the Environment to receive the waste which this waste management system is delivering under this Provisional Certificate of Approval, and that by accepting the waste being delivered by the waste management system, the waste disposal site and facilities will not be out of compliance with its Certificate of Approval or Provisional Certificate of Approval.

5. The reason for condition 5 is to ensure that waste particulates are not emitted to the environment as any such emission may result in a hazard to the health and safety of any person or the natural environment.

6. The reason for condition 6 is to ensure that all vehicles, trailers and equipment including those leased or rented for operation under this Provisional Certificate of Approval have been approved as part of a suitable waste transportation system to collect and transport waste as an unsuitable waste transportation system could result in a hazard to the health and safety of any person or the natural environment.

CONTENT COPY OF ORIGINAL

7. The reason for condition 7 is to ensure that the collection, handling and transportation of waste is conducted in a safe and environmentally acceptable manner, as outlined in Regulation 347.

8. The reason for condition 8 is to ensure that all waste carriers have met and are operating in compliance with the standards for waste management systems outlined in Regulation 347.

9. The reason for condition 9 is to ensure that the waste management system is operated under the corporate, limited or the applicant's own name which appears on the application and supporting information submitted for this Provisional Certificate of Approval and not under any name which the Director has not been asked to consider.

In accordance with Section 139 of the Environmental Protection Act, R.S.O. 1990, Chapter E-19, as amended, you may by written notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 142 of the Environmental Protection Act, provides that the Notice requiring the hearing shall state:

1. The portions of the approval or each term or condition in the approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The Certificate of Approval number;
6. The date of the Certificate of Approval;
7. The name of the Director;
8. The municipality within which the works are located;

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
2300 Yonge St., Suite 1700
P.O. Box 2382
Toronto, Ontario
M4P 1E4

AND

The Director
Section 39, *Environmental Protection Act*
Ministry of the Environment
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 314-4600, Fax: (416) 314-4506 or www.ert.gov.on.ca**

The above noted waste management system is approved under Section 39 of the Environmental Protection Act, and is subject to the Regulations made thereunder.

DATED AT TORONTO this 9th day of July, 2007

Mansoor Mahmood, P.Eng.
Director
Section 39, *Environmental Protection Act*

JJ/
c: District Manager, MOE Halton-Peel

Record of Site Condition

For Part XV.1 of the *Environmental Protection Act*

Summary

Registration Number	21301
Status	Filed
Filing Date	2007/06/18
Certification Date	2007/01/26
Current Property Use	Commercial
Intended Property Use	Commercial
Certificate of Property Use Number	No CPU
Applicable Standards	Full Depth Site Conditions Standard, with Nonpotable Ground Water, Medium/Fine Textured Soil, for Industrial/Commercial/Community property use
Property Municipal Address	930 Brant Street, Burlington, Ontario , L7R 2J7 , Canada

Notice to Readers Concerning Due Diligence

This record of site condition has been filed on the Environment Site Registry to which the public has access and which contains a notice advising users of the Registry who have dealings with any property to consider conducting their own due diligence with respect to the environmental condition of the property, in addition to reviewing information in the Registry.

Contents of this Record of Site Condition

This record of site condition consists of this document which is available to be printed directly from the Environmental Site Registry as well as all documentation indicated in this document to have been submitted in paper format to the Ministry of the Environment.

Definitions

The following definitions are taken from the *Environmental Protection Act* or Regulation 153/04 under that Act and are included for ease of reference. The Act and Regulation should be referenced for other applicable definitions.

In this Record of Site Condition,

"Act" means the *Environmental Protection Act*, as amended;

"Cleanup Guideline 1996" means the Ministry publication entitled "Guideline for Use at Contaminated Sites in Ontario" originally dated June 1996 and later revised;

"Intended property use", in relation to a record of site condition, means the type of property use in respect of which the record of site condition is filed;

"phase one environmental site assessment" has the same meaning as defined in the Act at s. 168.1;

"phase two environmental site assessment" has the same meaning as defined in the Act at s. 168.1;

"Regulation" means Ontario Regulation 153/04, Records of Site Condition Part XV.1 of the Act, as amended;

"risk assessment" has the same meaning as defined in the Act at s. 168.1;

"RSC" means a record of site condition under Part XV.1 of the Act;

"RSC property", in relation to a record of site condition, means the property in respect of which the record of site condition is filed;

"SSRA" means a site specific risk assessment conducted in accordance with the Cleanup Guideline 1996.

Part 1: Property Ownership, Property Information and Owner's Certifications

Information about the owner who is filing or authorizing the filing of the RSC

Owner Name	2064973 Ontario Inc.
Corporate Contact (Authorized Officer)	Mr. David Balardo
Mailing Address	18 Cedargrove CourtAncaster, OntarioL9G 4W5
Phone	905-5787784
Fax	905-5787786
Email	

RSC Property Location Information

Municipal Address	930 Brant Street Burlington, Ontario L7R 2J7 Canada
Municipality	BURLINGTON
Legal Description	Lt 76, rcp pl99, except pt2, 20R5391 & 301872; pt lt 75, rcp pl99; pt lt 77, rcp pl99, as in 623554 s/t 623554; s/t bh9167 burlington "amended mar 29' 99 j. menard.
Assessment Roll Number	2402050-50203600
Property Identification Number (PIN)	07087-0051 [LT]
RSC applies to entire legal property	YES

RSC Property Geo Reference

UTM Coordinates	NAD83 17-595993-4798790(converted from Latitude & Longitude)
Latitude & Longitude	43.33583330N 79.81583330W
Accuracy Estimate	2 to 5 meters
Measurement Method	Digitized from a map

RSC Property Use Information

The following types of property uses are defined by the Regulation: Agricultural or other use, Commercial use, Community use, Industrial use, Institutional use, Parkland use, and Residential use.

Current Property Use	Commercial
Intended Property Use	Commercial
Certificate of Property Use has been issued under section 168.6 of the Act	NO

Additional Documentation Provided by Property Owner or Agent

The following documents have been submitted to the Ministry of the Environment as part of the record of site condition:

1	Deed or Transfer for the property
2	Certificate of Status

Signature and Statements of Property Owner or Agent

As an authorized officer acting on behalf of the owner of the RSC property:

1. I acknowledge that the RSC will be filed in the Environmental Site Registry, that records of site condition that are filed in the Registry are available for examination by the public and that the Registry contains a notice advising users of the Registry who have dealings with any property to consider conducting their own due diligence with respect to the environmental condition of the property, in addition to reviewing information in the Registry.

2. I have conducted reasonable inquiries to obtain all information relevant to this RSC, including information from the other current owners of the RSC property named in this part of the RSC.

3. I have disclosed all information referred to in paragraph 2 to any qualified person named in this RSC.

4. To my knowledge, the statements made in this part of the RSC are true as of _____.

As an authorized officer making the certifications on behalf of the owner:

1. I certify that I have been authorized by the owner of the RSC property to make the statements prescribed by this section on their behalf and that the owner of the RSC property has read and understands the statements being made on their behalf.

Name of Authorized Officer_____ Signature _____ Date _____

A signed and dated copy of this Part of the record of site condition has been received by the Ministry of the Environment prior to the filing of this record of site condition in the Environmental Site Registry.

Part 2 List of Reports, Summary of Site Conditions, Qualified Person's Certifications

Qualified Person Information

Name	John Davis Monkman
Company	Soil-Mat Engineers & Consultants Ltd.
Job Title	Vice President
Business Address	130 LANCING DRHAMILTON, ON, L8W 3A1
Phone	905-3187440
Fax	905-3187455
Email	jmonkman@soil-mat.on.ca

Additional Documentation Provided by the Qualified Person

The following documents have been submitted to the Ministry of the Environment as part of the record of site condition:

1	Business Name Report in relation to the employer of the qualified person

Municipal Information

Local or Single-Tier Municipality

Municipality	BURLINGTON
Municipal Clerk	Ms. Kim Phillips
Address	426 Brant StreetBurlington, OntarioL7R 2G2
Phone	905-3357698
Fax	905-3357881
Email	phillipk@burlington.ca

Upper Tier Municipality

Municipality	HALTON
Municipal Clerk	Ms. Monica Wallensels
Address	1151 Bronte RoadOakville, OntarioL6M 3C1
Phone	905-8256000x7370
Fax	905-8258838
Email	wallensm@region.halton.on.ca

Ministry of the Environment District Office

District Office	HALTON-PEEL
District Office Address	Suite 300, 4145 North Service RD, Burlington, ON, L7L 6A3

Reports Supporting Record of Site Condition

The following types of assessments have been conducted in support of this record of site condition:

- A phase one environmental site assessment
- A phase two environmental site assessment

Previous RSCs applying to any part of the RSC property

Previous risk assessments or SSRA applying to any part of the RSC property

Assessments or other reports have been relied upon in certifying the information set out in this Part

Date	Report Title	Report Type	Author	Affiliation
2007/03/30	Phase II Environmental Site Assessment 930 Brant Street Burlington, Ontario		Mr. Keith Gleadall/ Mr. John Monkman, P.Eng.	Soil-Mat Engineers & Consultants Ltd.
2006/01/05	Phase I Environmental Site Assessment 930 Brant Street Burlington, Ontario		Mr. Keith Gleadall/ Mr. Danny Schebesch, M.E.Sc., P.Eng.	Soil-Mat Engineers & Consultants Ltd.

Site Condition Information

Total area of the RSC property (in hectares)	0.32
Phase Two Environmental Site Assessment applies to the entire RSC property	YES
Risk assessment has been prepared and accepted	NO
Environmentally Sensitive Area	No
Sediment Present	N
Soil Texture	Medium/Fine
Assessment/Restoration Approach	Full Depth
Property Use for Site Condition Standards Determination	Industrial/Commercial/Community
Ground Water Condition	Nonpotable
Contaminant testing on the Ground Water	N
Local Municipality Non-Potable Water Notification Date	2007/01/16
Upper Tier Municipality Non-Potable Water Notification Date	2007/01/16
Certification Date	2007/01/26

The applicable site condition standards applied for the purpose of this record of site condition are: Full Depth Site Conditions Standard, with Nonpotable Ground Water, Medium/Fine Textured Soil, for Industrial/Commercial/Community property use.

Final RSC Property Profile - Site Condition Standards

Soil

Contaminant Name	Maximum Concentration		Applicable Standard	Unit of Measure
ACETONE	<	0.074	3.8	Âµg/g
ANTIMONY	<	1.6	44	Âµg/g
ARSENIC		32	50	Âµg/g
BARIUM		79.2	2000	Âµg/g
BENZENE	<	0.1	25	Âµg/g
BERYLLIUM	<	0.4	1.2	Âµg/g
BORON (AVAILABLE)		0.752	2	Âµg/g
BROMODICHLOROMETHANE	<	0.004	25	Âµg/g
BROMOFORM	<	0.004	14	Âµg/g
BROMOMETHANE	<	0.009	0.38	Âµg/g
CADMIUM	<	0.4	12	Âµg/g
CARBON TETRACHLORIDE	<	0.004	0.64	Âµg/g
CHLOROBENZENE	<	0.004	30	Âµg/g

Contaminant Name	Maximum Concentration		Applicable Standard	Unit of Measure
CHLOROFORM	<	0.009	4.9	Âµg/g
CHROMIUM (TOTAL)		8.4	1000	Âµg/g
CHROMIUM (VI)	<	0.382	10	Âµg/g
COBALT		3.8	100	Âµg/g
COPPER		36	300	Âµg/g
CYANIDE (FREE)	<	1	100	Âµg/g
DIBROMOCHLOROMETHANE	<	0.004	18	Âµg/g
DICHLOROBENZENE, 1,2- (O-DCB)	<	0.004	30	Âµg/g
DICHLOROBENZENE, 1,3- (M-DCB)	<	0.004	30	Âµg/g
DICHLOROBENZENE, 1,4- (P-DCB)	<	0.005	30	Âµg/g
DICHLOROETHANE, 1,1-	<	0.006	140	Âµg/g
DICHLOROETHANE, 1,2-	<	0.003	0.14	Âµg/g
DICHLOROETHYLENE, 1,1-	<	0.002	0.015	Âµg/g
DICHLOROETHYLENE, CIS-1,2-	<	0.006	2.3	Âµg/g
DICHLOROETHYLENE, TRANS-1,2-	<	0.005	4.1	Âµg/g
DICHLOROPROPANE, 1,2-	<	0.004	0.12	Âµg/g
DICHLOROPROPENE, 1,3-	<	0.004	0.041	Âµg/g
ELECTRICAL CONDUCTIVITY		0.286	1.4	mS/cm
ETHYLBENZENE	<	0.05	1000	Âµg/g
ETHYLENE DIBROMIDE	<	0.004	0.02	Âµg/g
LEAD		141	1000	Âµg/g
MERCURY		0.075	10	Âµg/g
METHYL ETHYL KETONE	<	0.044	38	Âµg/g
METHYL ISOBUTYL KETONE	<	0.018	69	Âµg/g
METHYL TERT BUTYL ETHER	<	0.005	410	Âµg/g
METHYLENE CHLORIDE	<	0.007	200	Âµg/g
MOLYBDENUM	<	0.5	40	Âµg/g
NICKEL		7.2	200	Âµg/g
PETROLEUM HYDROCARBONS F1 (C6 - C10)	<	5	660	Âµg/g
PETROLEUM HYDROCARBONS F2 (>C10 - C16)		260	1500	Âµg/g
PETROLEUM HYDROCARBONS F3 (>C16 - C34)		190	2500	Âµg/g
PETROLEUM HYDROCARBONS F4 (>C34)		320	6600	Âµg/g
SELENIUM	<	0.8	10	Âµg/g
SILVER	<	0.4	50	Âµg/g
SODIUM ADSORPTION RATIO (SAR)		0.273	12	No Unit
STYRENE	<	0.002	7.7	Âµg/g
TETRACHLOROETHANE, 1,1,1,2-	<	0.004	0.12	Âµg/g
TETRACHLOROETHANE, 1,1,2,2-	<	0.002	0.23	Âµg/g
TETRACHLOROETHYLENE	<	0.005	0.45	Âµg/g
THALLIUM	<	0.4	32	Âµg/g
TOLUENE	<	0.08	150	Âµg/g
TRICHLOROBENZENE, 1,2,4-		0.007	30	Âµg/g

Contaminant Name	Maximum Concentration		Applicable Standard	Unit of Measure
TRICHLOROETHANE, 1,1,1-	<	0.003	34	Âµg/g
TRICHLOROETHANE, 1,1,2-	<	0.005	3.1	Âµg/g
TRICHLOROETHYLENE	<	0.004	3.9	Âµg/g
VANADIUM		12.1	250	Âµg/g
VINYL CHLORIDE	<	0.003	0.0075	Âµg/g
XYLENES	<	0.07	210	Âµg/g
ZINC		254	800	Âµg/g

Sediment

Contaminant Name	Maximum Concentration	Applicable Standard	Unit of Measure
No Measurements Provided			

Ground Water

Contaminant Name	Maximum Concentration	Applicable Standard	Unit of Measure
No Measurements Provided			

Remedial Action and Mitigation

Remediated Soils

Estimate of quantities of soil, if any, originating and remaining on the RSC property that have been remediated, at a location either on or off the RSC property, to reduce the concentration of contaminants in the soil.

Soil Remediation Process	Estimated Quantity of Soil (in-situ cubic meters)
No Remediation Provided	

Removed Soils

Estimated quantity of soil or sediment, if any, removed from and not returned to the RSC property (in-situ cubic meters): 0

Deposited Soils

Estimated quantity of soil or sediment, if any, being brought to and deposited at the RSC property not including any soil that has been remediated off the RSC property (identified in the Soil Remediation Process above) (in-situ cubic meters): 0

Remediated or Removed Soil From Near Property Boundary

Has any soil, sediment or ground water at the RSC property that is or was located within 3 meters of the RSC property boundary been remediated or removed for the purpose of remediation: NO

Ground Water Control or Treatment Measures

Ground Water Control or treatment measures that were required for the RSC property prior to the certification date for the purpose of filing the RSC:

No comments entered

Other than the activities identified above, constructed works to control or otherwise mitigate release or movement of known existing contaminants that are required for the RSC property after the certification date:

No comments entered

Other Activities Including Risk Management Measures

Other than the activities identified above, constructed works to control or otherwise mitigate release or movement of known existing contaminants that were required for the RSC property prior to the certification date for the purpose of filing the RSC:

No comments entered

Other than the activities identified above, constructed works to control or otherwise mitigate release or movement of known existing contaminants that are required for the RSC property after the certification date:

No comments entered

Monitoring or Maintenance

Soil monitoring requirements, or any requirements for care, maintenance, or replacement of any monitoring control works, for known existing contaminants, if any, on the RSC property, after the certification date:

No comments entered

Ground Water monitoring requirements, or any requirements for care, maintenance, or replacement of any monitoring control works, for known existing contaminants, if any, on the RSC property, after the certification date:

No comments entered

Certifications

As the qualified person, and in relation to this Part of the RSC, I certify that:

1. A phase one environmental site assessment of the RSC property, which includes the evaluation of the information gathered from a records review, site visit and interviews, has been conducted in accordance with the Regulation by or under the supervision of a qualified person as required by the Regulation.

2. I have conducted or supervised a phase two environmental site assessment, which includes the evaluation of information gathered through the sampling and analysis of soil and other site investigation or assessment activities, of all or part of the RSC property with respect to one or more contaminants, in accordance with the Regulation.

3. The information represents the site conditions at the sampling points at the time of sampling only and the conditions between and beyond the sampling points may vary.

4. As of 2007/01/26, in my opinion, based on the phase one environmental site assessment and the phase two environmental site assessment, and any confirmatory sampling, there is no evidence of any contaminants in the soil, ground water or sediment on, in or under the RSC property that would interfere with the type of property use to which the RSC property will be put, as specified in the RSC.

5. If non-potable ground water standards have been applied,

    a. I have given written notice of intention to apply non-potable ground water site condition standards to the clerk of the local municipality in which the property is located and the clerk of any upper-tier municipality in which the property is located.

    b. The owner of the property has informed me that either,

        i. the owner did not receive a notice of objection from either the local municipality or the upper-tier municipality within 30 days of the municipality or upper-tier municipality receiving the notice described in paragraph a, or

ii. after receiving a notice of objection from the municipality, the municipality has withdrawn its objection and given written consent to the application of non-potable ground water standards.

c. I did not receive a notice of objection from either the local municipality or the upper-tier municipality within 30 days of the municipality receiving the notice described in paragraph a, or, after I received a notice of objection from the municipality, the municipality gave written consent to the application of non-potable ground water standards.

6. As of 2007/01/26, in my opinion, based on the phase one and phase two environmental site assessments and any confirmatory sampling, the RSC property meets the applicable Full Depth site condition standards prescribed by section 37 of the Regulation for all contaminants prescribed by the Regulation in relation to the type of property use for which this RSC is filed, except for those contaminants (if any) specified in this RSC at Part 2, Final RSC Property Profile - Risk Assessment Standards.

7. As of 2007/01/26, the maximum known concentration of each contaminant in soil, sediment and ground water at the RSC property for which sampling and analysis has been performed is specified in this RSC at Final RSC Property Profile.

8. In relation to any contaminant excepted from the certification mentioned above and as specified in this RSC at Part 2, Final RSC Property Profile - Risk Assessment Standards, or in relation to any other contaminant that in my opinion is likely to cause an adverse effect:

   a. A risk assessment was prepared for the contaminant with respect to the property for which the phase two environmental site assessment was conducted.

   b. The Director has accepted the risk assessment under clause 168.5 (1) (a) of the Act.

   c. As of 2007/01/26, the property for which the phase two environmental site assessment was conducted meets the standards specified in the risk assessment for the contaminant.

As the qualified person, and in relation to this Part of the RSC, I also certify that:

1. I am a qualified person and have the qualifications required by section 5 of the Regulation.

2. I have in place an insurance policy that satisfies the requirements of section 7 of the Regulation.

3. I acknowledge that the RSC will be filed in the Environmental Site Registry, that records of site condition that are filed in the Registry are available for examination by the public and that the Registry contains a notice advising users of the Registry who have dealings with any property to consider conducting their own due diligence with respect to the environmental condition of the property, in addition to reviewing information in the Registry.

4. The opinions expressed in this RSC are engineering or scientific opinions made in accordance with generally accepted principles and practices as recognized by members of the environmental engineering or science profession or discipline practising at the same time and in the same or similar location.

5. To the best of my knowledge, the certifications and statements in this part of the RSC are true as of 2007/01/26.

6. By signing this RSC, I make no express or implied warranties or guarantees.

I, the qualified person named below, on the date stated below, make all of the stated certifications applicable to the qualified person in this Part of the record of site condition.

Name of Qualified Person _____ Signature _____ Date _____

A signed and dated copy of this Part of the record of site condition has been received by the Ministry of the Environment prior to the filing of this record of site condition in the Environmental Site Registry.

Record of Site Condition Filing Form

IMPORTANT notes for submission of Record of Site Condition (RSC) to Ministry of the Environment (MOE):

After completing RSC on Brownfields website, ensure that a signed copy of RSC is submitted to MOE.

Print the downloaded version of RSC in PDF.

Ensure that footer of each page of RSC detail indicates that the RSC is on "Submitted" status.

Forward the signed copy of PDF file together with the additional documentation listed under sections:

- Additional Documentation Provided by Property Owner or Agent
- Additional Documentation Provided by Qualified Person

The forwarding address and fax information for MOE office is:

Ministry of the Environment
Environmental Assessment and Approval Branch
2 St. Clair Avenue West, Floor 12 A
Toronto, Ontario M4V 1L5

Fax Number: 416-314-6810

Record of Site Condition

For Part XV.1 of the *Environmental Protection Act*

Summary

Registration Number	85314
Status	Filed
Filing Date	2010/09/21
Certification Date	2010/06/01
Current Property Use	Commercial
Intended Property Use	Residential
Certificate of Property Use Number	No CPU
Applicable Standards	Full Depth Site Conditions Standard, with Nonpotable Ground Water, Coarse Textured Soil, for Residential/Parkland/Institutional property use
Property Municipal Address	1134 PLAINS RD E, BURLINGTON, ON, L7S 1W6

Notice to Readers Concerning Due Diligence

This record of site condition has been filed on the Environment Site Registry to which the public has access and which contains a notice advising users of the Registry who have dealings with any property to consider conducting their own due diligence with respect to the environmental condition of the property, in addition to reviewing information in the Registry.

Contents of this Record of Site Condition

This record of site condition consists of this document which is available to be printed directly from the Environmental Site Registry as well as all documentation indicated in this document to have been submitted in paper format to the Ministry of the Environment.

Definitions

The following definitions are taken from the *Environmental Protection Act* or Regulation 153/04 under that Act and are included for ease of reference. The Act and Regulation should be referenced for other applicable definitions.

In this Record of Site Condition,

"Act" means the *Environmental Protection Act*, as amended;

"Cleanup Guideline 1996" means the Ministry publication entitled "Guideline for Use at Contaminated Sites in Ontario" originally dated June 1996 and later revised;

"Intended property use", in relation to a record of site condition, means the type of property use in respect of which the record of site condition is filed;

"phase one environmental site assessment" has the same meaning as defined in the Act at s. 168.1;

"phase two environmental site assessment" has the same meaning as defined in the Act at s. 168.1;

"Regulation" means Ontario Regulation 153/04, Records of Site Condition Part XV.1 of the Act, as amended;

"risk assessment" has the same meaning as defined in the Act at s. 168.1;

"RSC" means a record of site condition under Part XV.1 of the Act;

"RSC property", in relation to a record of site condition, means the property in respect of which the record of site condition is filed;

"SSRA" means a site specific risk assessment conducted in accordance with the Cleanup Guideline 1996.

Part 1: Property Ownership, Property Information and Owner's Certifications

Information about the owner who is filing or authorizing the filing of the RSC

Owner Name	TTA Investments Inc.
Corporate Contact (Authorized Officer)	Mr. Russell Fearon
Mailing Address	1134 PLAINS RD EBURLINGTON, ON, L7S 1W6
Phone	905-6818437
Fax	905-6818433
Email	rfearon@throatthreads.com

Filing Owner's Agent

Agent Name	Mr. Andy D. Vanin
Mailing Address	2470 MILLTOWER CRTMISSISSAUGA, ON, L5N 7W5
Phone	905-3631395
Fax	905-3630681
Email	avanin@pinchin.com

RSC Property Location Information

Municipal Address	1134 PLAINS RD E BURLINGTON, ON, L7S 1W6
Municipality	BURLINGTON
Legal Description	Consolidation of various properties; Part of Lt 14, RCP Plan 99, designated as PTS 1-5 Incl., 8, 10, 12-18, Incl., on 20R6130,PTS 1-4, Incl., on 20R10061 and PTS 8-10, Incl., on 20R17102 stopped up and closed by HR559307;PT of Plains Road East (formerly "The Old" QEW Highway), being PT of LT 14, PL 99 & Part of Hamilton and Nelson Road, Plan 99Des as PTS 6, 7, on 20R17102 stopped up and closed by instrument HR559307; Burlington. T/W 614417; S/T 804368, 92269 and S/T easement in gross over PT 7, on 20R17102 as in HR622550.
Assessment Roll Number	2402-020-213-15900-0000
Property Identification Number (PIN)	07087-0387 (LT)
RSC applies to entire legal property	YES

RSC Property Geo Reference

UTM Coordinates	NAD83 17-595297-4797988
Latitude & Longitude	43.32869790N 79.82455130W (converted from UTM)
Accuracy Estimate	2 to 5 meters
Measurement Method	Digitized from a map

RSC Property Use Information

The following types of property uses are defined by the Regulation: Agricultural or other use, Commercial use, Community use, Industrial use, Institutional use, Parkland use, and Residential use.

Current Property Use	Commercial
Intended Property Use	Residential

Certificate of Property Use has been issued under section 168.6 of the Act	NO

Additional Documentation Provided by Property Owner or Agent

The following documents have been submitted to the Ministry of the Environment as part of the record of site condition:

1	Authorization to file the RSC
2	Authorization to make the statements and to sign the RSC on the owner's behalf
3	Deed or Transfer for the property
4	Certificate of Status

Signature and Statements of Property Owner or Agent

As an agent acting on behalf of the owner of the RSC property:

1. I acknowledge that the RSC will be filed in the Environmental Site Registry, that records of site condition that are filed in the Registry are available for examination by the public and that the Registry contains a notice advising users of the Registry who have dealings with any property to consider conducting their own due diligence with respect to the environmental condition of the property, in addition to reviewing information in the Registry.

2. I have conducted reasonable inquiries to obtain all information relevant to this RSC, including information from the other current owners of the RSC property named in this part of the RSC.

3. I have disclosed all information referred to in paragraph 2 to any qualified person named in this RSC.

4. To my knowledge, the statements made in this part of the RSC are true as of _____.

As an agent making the certifications on behalf of the owner:

1. I certify that I have been authorized by the owner of the RSC property to make the statements prescribed by this section on their behalf and that the owner of the RSC property has read and understands the statements being made on their behalf.

Name of Agent_____ Signature _____ Date _____

A signed and dated copy of this Part of the record of site condition has been received by the Ministry of the Environment prior to the filing of this record of site condition in the Environmental Site Registry.

Part 2 List of Reports, Summary of Site Conditions, Qualified Person's Certifications

Qualified Person Information

Name	Andy D. Vanin
Company	Pinchin Environmental Ltd.
Job Title	Manager
Business Address	875 Main Street West, Unit 11Hamilton, OntarioL8S 4R9
Phone	905-5776206x1707
Fax	905-5776207
Email	avanin@pinchin.com

Additional Documentation Provided by the Qualified Person

The following documents have been submitted to the Ministry of the Environment as part of the record of site condition:

1	Certificate of Status in relation to the employer of the qualified person

Municipal Information

Local or Single-Tier Municipality

Municipality	BURLINGTON
Municipal Clerk	Ms. Kim Phillips
Address	426 BRANT STBURLINGTON, ON, L7R 3Z6
Phone	905-3357698
Fax	905-3357881
Email	

Upper Tier Municipality

Municipality	HALTON
Municipal Clerk	Ms. Monica Wallenfels
Address	1151 BRONTE RDOAKVILLE, ON, L6M 3L1
Phone	905-8256000
Fax	905-8258822
Email	

Ministry of the Environment District Office

District Office	HALTON-PEEL
District Office Address	Suite 300, 4145 North Service RD, Burlington, ON, L7L 6A3

Reports Supporting Record of Site Condition

The following types of assessments have been conducted in support of this record of site condition:

- A phase one environmental site assessment
- A phase two environmental site assessment

Previous RSCs applying to any part of the RSC property

Previous risk assessments or SSRA applying to any part of the RSC property

Assessments or other reports have been relied upon in certifying the information set out in this Part

Date	Report Title	Report Type	Author	Affiliation
2010/06/16	Phase II Environmental Site Assessment, 1134 Plains Road East, Burlington, Ontario	Phase 2 ESA	Lindsay Bell, B.Sc. & Andy Vanin, P.Eng.	Pinchin Environmental Ltd.
2010/03/24	Environmental Peer Review	Others	Andy Vanin, P.Eng.	Pinchin Environmental Ltd.
2007/12/12	Supplemental Phase II Environmental Assessment, 1134 Plains Road East, Burlington, Ontario	Phase 2 ESA	Dankia Durish, BSc., & Melissa King, P.Geo.	PETO MacCallum Ltd.
2007/09/12	Addendum to Phase II Environmental Site Assessment, 1134 Plains Road East, Burlington, Ontario	Others	Melissa King, P.Geo.	PETO MacCallum Ltd.
2007/08/28	Memorandum - Response to MOE Freedom of Information Request	Others	Melissa King, P.Geo.	PETO MacCallum Ltd.
2007/08/03	Phase II Environmental Site Assessment, 1134 Plains Road East, Burlington, Ontario	Phase 2 ESA	Dankia Durish, BSc., & Melissa King, P.Geo.	PETO MacCallum Ltd.
2007/07/19	Phase I Environmental Site Assessment, 1134 Plains Road East, Burlington, Ontario	Phase 1 ESA	Emma Cunningham, BSc., & Melissa King, P.Geo.	PETO MacCallum Ltd.
2003/09/01	1134 Plains Road East, Burlington, Ontario, Tank Removal Inspection	Others	David J. Hutchinson	Winchurch Environmental Inc.

Site Condition Information

Total area of the RSC property (in hectares)	0.67
Phase Two Environmental Site Assessment applies to the entire RSC property	YES
Risk assessment has been prepared and accepted	NO
Environmentally Sensitive Area	No
Sediment Present	N
Soil Texture	Coarse
Assessment/Restoration Approach	Full Depth
Property Use for Site Condition Standards Determination	Residential/Parkland/Institutional
Ground Water Condition	Nonpotable
Contaminant testing on the Ground Water	Y
Local Municipality Non-Potable Water Notification Date	2010/06/28
Upper Tier Municipality Non-Potable Water Notification Date	2010/06/28
Certification Date	2010/06/01

The applicable site condition standards applied for the purpose of this record of site condition are: Full Depth Site Conditions Standard, with Nonpotable Ground Water, Coarse Textured Soil, for Residential/Parkland/Institutional property use.

Final RSC Property Profile - Site Condition Standards

Soil

Contaminant Name	Maximum Concentration		Applicable Standard	Unit of Measure
ACENAPHTHENE	<	0.01	1000	Âµg/g
ACENAPHTHYLENE	<	0.005	100	Âµg/g
ACETONE	<	0.1	3.8	Âµg/g
ANTHRACENE	<	0.005	28	Âµg/g
ANTIMONY		0.3	13	Âµg/g
ARSENIC		5	20	Âµg/g
BARIUM		17	750	Âµg/g
BENZENE		0.008	5.3	Âµg/g
BENZO(A)ANTHRACENE	<	0.01	40	Âµg/g
BENZO(A)PYRENE	<	0.005	1.2	Âµg/g
BENZO(B)FLUORANTHENE	<	0.01	12	Âµg/g
BENZO(G,H,I)PERYLENE	<	0.02	40	Âµg/g
BENZO(K)FLUORANTHENE	<	0.01	12	Âµg/g
BERYLLIUM		0.3	1.2	Âµg/g
BROMODICHLOROMETHANE	<	0.002	14	Âµg/g
BROMOFORM	<	0.002	2.3	Âµg/g
BROMOMETHANE	<	0.003	0.061	Âµg/g
CADMIUM	<	0.1	12	Âµg/g
CARBON TETRACHLORIDE	<	0.002	0.1	Âµg/g
CHLOROBENZENE	<	0.002	8	Âµg/g
CHLOROFORM	<	0.002	0.79	Âµg/g
CHROMIUM (VI)		8	8	Âµg/g
CHRYSENE	<	0.01	12	Âµg/g
COBALT		4.8	40	Âµg/g
COPPER		30	225	Âµg/g
DIBENZO(A,H)ANTHRACENE	<	0.02	1.2	Âµg/g
DIBROMOCHLOROMETHANE	<	0.002	10	Âµg/g
DICHLOROBENZENE, 1,2- (O-DCB)	<	0.002	30	Âµg/g
DICHLOROBENZENE, 1,3- (M-DCB)	<	0.002	30	Âµg/g
DICHLOROBENZENE, 1,4- (P-DCB)	<	0.002	30	Âµg/g
DICHLOROETHANE, 1,1-	<	0.002	22	Âµg/g
DICHLOROETHANE, 1,2-	<	0.002	0.022	Âµg/g
DICHLOROETHYLENE, 1,1-	<	0.002	0.0024	Âµg/g
DICHLOROETHYLENE, CIS-1,2-	<	0.002	2.3	Âµg/g
DICHLOROETHYLENE, TRANS-1,2-	<	0.002	4.1	Âµg/g
DICHLOROPROPANE, 1,2-	<	0.002	0.019	Âµg/g
ETHYLBENZENE	<	0.002	290	Âµg/g
ETHYLENE DIBROMIDE	<	0.002	0.0056	Âµg/g
FLUORANTHENE	<	0.005	40	Âµg/g
FLUORENE	<	0.005	350	Âµg/g
INDENO(1,2,3-CD)PYRENE	<	0.02	12	Âµg/g
LEAD		8	200	Âµg/g
METHYL ETHYL KETONE	<	0.03	38	Âµg/g

Contaminant Name	Maximum Concentration		Applicable Standard	Unit of Measure
METHYL ISOBUTYL KETONE	<	0.03	58	Âµg/g
METHYL TERT BUTYL ETHER	<	0.002	100	Âµg/g
METHYLENE CHLORIDE	<	0.003	120	Âµg/g
METHYLNAPHTHALENE, 2-(*1-)	<	0.005	280	Âµg/g
MOLYBDENUM		0.8	40	Âµg/g
NAPHTHALENE	<	0.005	40	Âµg/g
NICKEL		9.2	150	Âµg/g
PETROLEUM HYDROCARBONS F1 (C6 - C10)	<	10	30	Âµg/g
PETROLEUM HYDROCARBONS F2 (>C10 - C16)		40	150	Âµg/g
PETROLEUM HYDROCARBONS F3 (>C16 - C34)	<	10	400	Âµg/g
PETROLEUM HYDROCARBONS F4 (>C34)	<	10	2800	Âµg/g
PHENANTHRENE	<	0.005	40	Âµg/g
PYRENE	<	0.005	250	Âµg/g
SELENIUM	<	0.5	10	Âµg/g
SILVER	<	0.2	20	Âµg/g
STYRENE	<	0.002	1.2	Âµg/g
TETRACHLOROETHANE, 1,1,1,2-	<	0.002	0.019	Âµg/g
TETRACHLOROETHANE, 1,1,2,2-	<	0.002	0.037	Âµg/g
TETRACHLOROETHYLENE	<	0.002	0.45	Âµg/g
THALLIUM	<	0.05	4.1	Âµg/g
TOLUENE		0.016	34	Âµg/g
TRICHLOROETHANE, 1,1,1-	<	0.002	26	Âµg/g
TRICHLOROETHANE, 1,1,2-	<	0.002	2.3	Âµg/g
TRICHLOROETHYLENE	<	0.002	1.1	Âµg/g
VANADIUM		16	200	Âµg/g
VINYL CHLORIDE	<	0.002	0.003	Âµg/g
XYLENES		0.014	34	Âµg/g
ZINC		33	600	Âµg/g

Sediment

Contaminant Name	Maximum Concentration	Applicable Standard	Unit of Measure
No Measurements Provided			

Ground Water

Contaminant Name	Maximum Concentration		Applicable Standard	Unit of Measure
ACENAPHTHENE	<	0.05	1700	Âµg/l
ACENAPHTHYLENE		0.05	2000	Âµg/l
ACETONE	<	10	3300	Âµg/l
ANTHRACENE		0.09	12	Âµg/l
ANTIMONY		0.6	16000	Âµg/l

Contaminant Name	Maximum Concentration		Applicable Standard	Unit of Measure
ARSENIC	<	5	480	Âµg/l
BARIUM		190	23000	Âµg/l
BENZENE	<	0.1	1900	Âµg/l
BENZO(A)ANTHRACENE		0.19	5	Âµg/l
BENZO(A)PYRENE		0.17	1.9	Âµg/l
BENZO(B)FLUORANTHENE		0.21	7	Âµg/l
BENZO(G,H,I)PERYLENE	<	0.1	0.2	Âµg/l
BENZO(K)FLUORANTHENE		0.08	0.4	Âµg/l
BERYLLIUM	<	0.5	53	Âµg/l
BORON (AVAILABLE)		81	50000	Âµg/l
BROMODICHLOROMETHANE	<	0.1	50000	Âµg/l
BROMOFORM	<	0.2	840	Âµg/l
BROMOMETHANE	<	0.5	3.7	Âµg/l
CADMIUM	<	0.1	11	Âµg/l
CARBON TETRACHLORIDE	<	0.1	17	Âµg/l
CHLOROBENZENE	<	0.1	500	Âµg/l
CHLOROFORM	<	0.1	430	Âµg/l
CHROMIUM (TOTAL)	<	5	2000	Âµg/l
CHRYSENE		0.19	3	Âµg/l
COBALT		1.6	100	Âµg/l
COPPER		4	23	Âµg/l
DIBENZO(A,H)ANTHRACENE	<	0.1	0.25	Âµg/l
DIBROMOCHLOROMETHANE	<	0.2	50000	Âµg/l
DICHLOROBENZENE, 1,2- (O-DCB)	<	0.2	7600	Âµg/l
DICHLOROBENZENE, 1,3- (M-DCB)	<	0.2	7600	Âµg/l
DICHLOROBENZENE, 1,4- (P-DCB)	<	0.2	7600	Âµg/l
DICHLOROETHANE, 1,1-	<	0.1	9000	Âµg/l
DICHLOROETHANE, 1,2-	<	0.2	17	Âµg/l
DICHLOROETHYLENE, 1,1-	<	0.1	0.66	Âµg/l
DICHLOROETHYLENE, CIS-1,2-	<	0.1	70	Âµg/l
DICHLOROETHYLENE, TRANS-1,2-	<	0.1	100	Âµg/l
DICHLOROPROPANE, 1,2-	<	0.1	9.3	Âµg/l
ETHYLBENZENE	<	0.1	28000	Âµg/l
ETHYLENE DIBROMIDE	<	0.2	3.3	Âµg/l
FLUORANTHENE		0.41	130	Âµg/l
FLUORENE	<	0.05	290	Âµg/l
INDENO(1,2,3-CD)PYRENE	<	0.1	0.27	Âµg/l
LEAD	<	0.5	32	Âµg/l
METHYL ETHYL KETONE	<	5	50000	Âµg/l
METHYL ISOBUTYL KETONE	<	5	50000	Âµg/l
METHYL TERT BUTYL ETHER	<	0.2	50000	Âµg/l
METHYLENE CHLORIDE	<	0.5	50000	Âµg/l
METHYLNAPHTHALENE, 2-(*1-)	<	0.05	13000	Âµg/l

Contaminant Name	Maximum Concentration		Applicable Standard	Unit of Measure
MOLYBDENUM		29	7300	Âµg/l
NAPHTHALENE		0.05	5900	Âµg/l
NICKEL		9	1600	Âµg/l
PHENANTHRENE		0.28	63	Âµg/l
PYRENE		0.39	40	Âµg/l
SELENIUM	<	2	50	Âµg/l
SILVER	<	0.1	1.2	Âµg/l
STYRENE	<	0.2	940	Âµg/l
TETRACHLOROETHANE, 1,1,1,2-	<	0.1	6	Âµg/l
TETRACHLOROETHANE, 1,1,2,2-	<	0.2	22	Âµg/l
TETRACHLOROETHYLENE	<	0.1	5	Âµg/l
THALLIUM		0.06	400	Âµg/l
TOLUENE	<	0.2	5900	Âµg/l
TRICHLOROETHANE, 1,1,1-	<	0.1	200	Âµg/l
TRICHLOROETHANE, 1,1,2-	<	0.2	16000	Âµg/l
TRICHLOROETHYLENE	<	0.1	50	Âµg/l
VANADIUM	<	5	200	Âµg/l
VINYL CHLORIDE	<	0.2	0.5	Âµg/l
XYLENES		0.1	5600	Âµg/l
ZINC		9	1100	Âµg/l

Remedial Action and Mitigation

Remediated Soils

Estimate of quantities of soil, if any, originating and remaining on the RSC property that have been remediated, at a location either on or off the RSC property, to reduce the concentration of contaminants in the soil.

Soil Remediation Process	Estimated Quantity of Soil (in-situ cubic meters)
No Remediation Provided	

Removed Soils

Estimated quantity of soil or sediment, if any, removed from and not returned to the RSC property (in-situ cubic meters): 0

Deposited Soils

Estimated quantity of soil or sediment, if any, being brought to and deposited at the RSC property not including any soil that has been remediated off the RSC property (identified in the Soil Remediation Process above) (in-situ cubic meters): 0

Remediated or Removed Soil From Near Property Boundary

Has any soil, sediment or ground water at the RSC property that is or was located within 3 meters of the RSC property boundary been remediated or removed for the purpose of remediation: NO

Ground Water Control or Treatment Measures

Ground Water Control or treatment measures that were required for the RSC property prior to the certification date for the purpose of filing the RSC:

No comments entered

Other than the activities identified above, constructed works to control or otherwise mitigate release or movement of known existing contaminants that are required for the RSC property after the certification date:

No comments entered

Other Activities Including Risk Management Measures

Other than the activities identified above, constructed works to control or otherwise mitigate release or movement of known existing contaminants that were required for the RSC property prior to the certification date for the purpose of filing the RSC:

No comments entered

Other than the activities identified above, constructed works to control or otherwise mitigate release or movement of known existing contaminants that are required for the RSC property after the certification date:

No comments entered

Monitoring or Maintenance

Soil monitoring requirements, or any requirements for care, maintenance, or replacement of any monitoring control works, for known existing contaminants, if any, on the RSC property, after the certification date:

No comments entered

Ground Water monitoring requirements, or any requirements for care, maintenance, or replacement of any monitoring control works, for known existing contaminants, if any, on the RSC property, after the certification date:

No comments entered

Certifications

As the qualified person, and in relation to this Part of the RSC, I certify that:

1. A phase one environmental site assessment of the RSC property, which includes the evaluation of the information gathered from a records review, site visit and interviews, has been conducted in accordance with the Regulation by or under the supervision of a qualified person as required by the Regulation.

2. I have conducted or supervised a phase two environmental site assessment, which includes the evaluation of information gathered through the sampling and analysis of soil and other site investigation or assessment activities, of all or part of the RSC property with respect to one or more contaminants, in accordance with the Regulation.

3. The information represents the site conditions at the sampling points at the time of sampling only and the conditions between and beyond the sampling points may vary.

4. As of 2010/06/01, in my opinion, based on the phase one environmental site assessment and the phase two environmental site assessment, and any confirmatory sampling, there is no evidence of any contaminants in the soil, ground water or sediment on, in or under the RSC property that would interfere with the type of property use to which the RSC property will be put, as specified in the RSC.

5. If non-potable ground water standards have been applied,

    a. The owner of the property or a person authorized by the owner of the property has informed me that the owner of the property has given written notice of intention to apply non-potable ground water site condition standards to the clerk of the local municipality in which the property is located and the clerk of any upper-tier municipality in which the property is located.

b. The owner of the property has informed me that either,

i. the owner did not receive a notice of objection from either the local municipality or the upper-tier municipality within 30 days of the municipality or upper-tier municipality receiving the notice described in paragraph a, or

ii. after receiving a notice of objection from the municipality, the municipality has withdrawn its objection and given written consent to the application of non-potable ground water standards.

c. I did not receive a notice of objection from either the local municipality or the upper-tier municipality within 30 days of the municipality receiving the notice described in paragraph a, or, after I received a notice of objection from the municipality, the municipality gave written consent to the application of non-potable ground water standards.

6. As of 2010/06/01, in my opinion, based on the phase one and phase two environmental site assessments and any confirmatory sampling, the RSC property meets the applicable Full Depth site condition standards prescribed by section 37 of the Regulation for all contaminants prescribed by the Regulation in relation to the type of property use for which this RSC is filed, except for those contaminants (if any) specified in this RSC at Part 2, Final RSC Property Profile - Risk Assessment Standards.

7. As of 2010/06/01, the maximum known concentration of each contaminant in soil, sediment and ground water at the RSC property for which sampling and analysis has been performed is specified in this RSC at Final RSC Property Profile.

8. In relation to any contaminant excepted from the certification mentioned above and as specified in this RSC at Part 2, Final RSC Property Profile - Risk Assessment Standards, or in relation to any other contaminant that in my opinion is likely to cause an adverse effect:

a. A risk assessment was prepared for the contaminant with respect to the property for which the phase two environmental site assessment was conducted.

b. The Director has accepted the risk assessment under clause 168.5 (1) (a) of the Act.

c. As of 2010/06/01, the property for which the phase two environmental site assessment was conducted meets the standards specified in the risk assessment for the contaminant.

As the qualified person, and in relation to this Part of the RSC, I also certify that:

1. I am a qualified person and have the qualifications required by section 5 of the Regulation.

2. I have in place an insurance policy that satisfies the requirements of section 7 of the Regulation.

3. I acknowledge that the RSC will be filed in the Environmental Site Registry, that records of site condition that are filed in the Registry are available for examination by the public and that the Registry contains a notice advising users of the Registry who have dealings with any property to consider conducting their own due diligence with respect to the environmental condition of the property, in addition to reviewing information in the Registry.

4. The opinions expressed in this RSC are engineering or scientific opinions made in accordance with generally accepted principles and practices as recognized by members of the environmental engineering or science profession or discipline practising at the same time and in the same or similar location.

5. To the best of my knowledge, the certifications and statements in this part of the RSC are true as of 2010/06/01.

6. By signing this RSC, I make no express or implied warranties or guarantees.

I, the qualified person named below, on the date stated below, make all of the stated certifications applicable to the qualified person in this Part of the record of site condition.

Name of Qualified Person _____ Signature _____ Date _____

A signed and dated copy of this Part of the record of site condition has been received by the Ministry of the Environment prior to the filing of this record of site condition in the Environmental Site Registry.

Record of Site Condition Filing Form

IMPORTANT notes for submission of Record of Site Condition (RSC) to Ministry of the Environment (MOE):

After completing RSC on Brownfields website, ensure that a signed copy of RSC is submitted to MOE.

Print the downloaded version of RSC in PDF.

Ensure that footer of each page of RSC detail indicates that the RSC is on "Submitted" status.

Forward the signed copy of PDF file together with the additional documentation listed under sections:

- Additional Documentation Provided by Property Owner or Agent
- Additional Documentation Provided by Qualified Person

The forwarding address and fax information for MOE office is:

Ministry of the Environment
Environmental Assessment and Approval Branch
2 St. Clair Avenue West, Floor 12 A
Toronto, Ontario M4V 1L5

Fax Number: 416-314-6810

AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL
NUMBER 9850-DEJRJB
Issue Date: March 16, 2025

Nalco Canada ULC
1055 Truman Street
Burlington, Ontario
L7R 3Y9

Site Location: 1055 Truman Street
1055 Truman St
Burlington City, Regional Municipality of Halton
L7R 3Y9

You have applied under section 20.2 of Part II.1 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:

Description Section

A facility producing chemicals for water and process treatment, consisting of the following processes and support units:

- polymer plant;
- liquid room;
- brownstock room;
- repackage area;
- warehouse area;
- maintenance shop;
- IBC testing and repair facility;
- truck & rail tanker loading and unloading;
- quality assurance laboratory;
- natural gas-fired process boiler(s); and
- cooling tower(s);

including the Equipment and any other ancillary and support processes and activities, operating at a Facility Production Limit of up to **30,000,000 kilograms of chemicals for water and process treatment per year**,

discharging to the air as described in the Original ESDM Report.

For the purpose of this environmental compliance approval, the following definitions apply:

1. "ACB list" means the document entitled “Air Contaminants Benchmarks (ACB) List: Standards, guidelines and screening levels for assessing point of impingement concentrations of air contaminants”, as amended from time to time and published by the Ministry and available on a Government website;

2. "Acceptable Point of Impingement Concentration" means a concentration accepted by the Ministry as not likely to cause an adverse effect for a Compound of Concern that,

   a. is not identified in the ACB list, or

   b. is identified in the ACB list as belonging to the category “Benchmark 2” and has a concentration at a Point of Impingement that exceeds the concentration set out for the contaminant in that document.

   With respect to the Original ESDM Report, the Acceptable Point of Impingement Concentration for a Compound of Concern mentioned above is the concentration set out in the Original ESDM Report;

3. "Acoustic Assessment Report" means the report, prepared in accordance with Publication NPC-233 and Appendix A of the Basic Comprehensive User Guide, by Jihyun Cho / Stantec Consulting Ltd. and dated June 20, 2024, submitted in support of the application, that documents all sources of noise emissions and Noise Control Measures present at the Facility, as updated in accordance with Condition 5 of this Approval;

4. "Acoustic Assessment Summary Table" means a table prepared in accordance with the Basic Comprehensive User Guide summarising the results of the Acoustic Assessment Report, as updated in accordance with Condition 5 of this Approval;

5. "Approval" means this entire Environmental Compliance Approval and any Schedules to it;

6. "Basic Comprehensive User Guide" means the Ministry document titled "Basic Comprehensive Certificates of Approval (Air) User Guide” dated March 2011, as amended;

7. "Company" means Nalco Canada ULC that is responsible for the construction or operation of the Facility and includes any successors and assigns in accordance with section 19 of the EPA;

8. "Compound of Concern" means a contaminant described in paragraph 4 subsection 26 (1) of O. Reg. 419/05, namely, a contaminant that is discharged from the Facility in an amount that is not negligible;

9. "Description Section" means the section on page one of this Approval describing the Company's

operations and the Equipment located at the Facility and specifying the Facility Production Limit for the Facility;

10. "Director" means a person appointed for the purpose of section 20.3 of the EPA by the Minister pursuant to section 5 of the EPA;

11. "District Manager" means the District Manager of the appropriate local district office of the Ministry, where the Facility is geographically located;

12. "Emission Summary Table" means a table described in paragraph 14 of subsection 26 (1) of O. Reg. 419/05;

13. "Environmental Assessment Act" means the *Environmental Assessment Act,* R.S.O. 1990, c.E.18;

14. "EPA" means the *Environmental Protection Act,* R.S.O. 1990, c.E.19;

15. "Equipment" means equipment or processes described in the ESDM Report, this Approval and in the Schedules referred to herein and any other equipment or processes;

16. "Equipment with Specific Operational Limits" means any Equipment related to the thermal oxidation of waste or waste derived fuels, fume incinerators or any other Equipment that is specifically referenced in any published Ministry document that outlines specific operational guidance that must be considered by the Director in issuing an Approval;

17. "ESDM Report" means the most current Emission Summary and Dispersion Modelling Report that describes the Facility. The ESDM Report is based on the Original ESDM Report and is updated after the issuance of this Approval in accordance with section 26 of O. Reg. 419/05 and the Procedure Document;

18. "Facility" means the entire operation located on the property where the Equipment is located;

19. "Facility Production Limit" means the production limit placed by the Director on the main product(s) or raw materials used by the Facility;

20. "Highest Ranking Person" means the highest ranking person regularly present at the Facility who has management responsibilities relating to the Facility;

21. "Log" means a document that contains a record of each change that is required to be made to the ESDM Report and Acoustic Assessment Report, including the date on which the change occurred. For example, a record would have to be made of a more accurate emission rate for a source of contaminant, more accurate meteorological data, a more accurate value of a parameter that is related to a source of contaminant, a change to a Point of Impingement and all changes to information associated with a Modification to the Facility that satisfies Condition 2;

22. "Minister" means the Minister of the Environment, Conservation and Parks or such other member of

the Executive Council as may be assigned the administration of the EPA under the Executive Council Act;

23. "Ministry" means the ministry of the Minister;

24. "Modification" means any construction, alteration, extension or replacement of any plant, structure, equipment, apparatus, mechanism or thing, or alteration of a process or rate of production at the Facility that may discharge or alter the rate or manner of discharge of a Compound of Concern to the air or discharge or alter noise or vibration emissions from the Facility;

25. "Noise Control Measures" means measures to reduce the noise emissions from the Facility and/or Equipment including, but not limited to, silencers, acoustic louvres, enclosures, absorptive treatment, plenums and barriers. It also means the noise control measures outlined in section 7 of the Acoustic Assessment Report;

26. "O. Reg. 419/05" means Ontario Regulation 419/05: Air Pollution – Local Air Quality, made under the EPA;

27. "Original ESDM Report" means the Emission Summary and Dispersion Modelling Report which was prepared in accordance with section 26 of O. Reg. 419/05 and the Procedure Document by Stantec Consulting Ltd. and dated February 12, 2024 submitted in support of the application, and includes any changes to the report made up to the date of issuance of this Approval;

28. "Point of Impingement" has the same meaning as in section 2 of O. Reg. 419/05;

29. "Point of Reception" means Point of Reception as defined by Publication NPC-300;

30. "Procedure Document" means Ministry guidance document titled "Procedure for Preparing an Emission Summary and Dispersion Modelling Report" dated March 2018, as amended;

31. "Processes with Significant Environmental Aspects" means the Equipment which, during regular operation, would discharge one or more contaminants into the air in an amount which is not considered as negligible in accordance with section 26 (1) 4 of O. Reg. 419/05 and the Procedure Document;

32. "Publication NPC-207" means the Ministry draft technical publication "Impulse Vibration in Residential Buildings", November 1983, supplementing the Model Municipal Noise Control By-Law, Final Report, published by the Ministry, August 1978, as amended;

33. "Publication NPC-233" means the Ministry Publication NPC-233, "Information to be Submitted for Approval of Stationary Sources of Sound", October, 1995, as amended;

34. "Publication NPC-300" means the Ministry Publication NPC-300, “Environmental Noise Guideline, Stationary and Transportation Sources – Approval and Planning, Publication NPC-300”, August

2013, as amended;

35. "Schedules" means the following schedules attached to this Approval and forming part of this Approval namely:

    - Schedule A - Supporting Documentation

36. "Toxicologist" means a qualified professional currently active in the field of risk assessment and toxicology that has a combination of formal university education, training and experience necessary to assess contaminants; and

37. "Written Summary Form" means the electronic questionnaire form, available on the Ministry website, that documents whether Modifications were undertaken at the Facility and compliance with the Approval, in the previous calendar year.

You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. GENERAL

1. Except as otherwise provided by this Approval, the Facility shall be designed, developed, built, operated and maintained in accordance with the terms and conditions of this Approval and in accordance with the following Schedules attached hereto:

    - Schedule A - Supporting Documentation

2. OPERATIONAL FLEXIBILITY

1. Pursuant to section 20.6 (1) of the EPA and subject to Conditions 2.2 and 2.3 of this Approval, future construction, alterations, extensions or replacements are approved in this Approval if the future construction, alterations, extensions or replacements are Modifications to the Facility that:

    a. are within the scope of the operations of the Facility as described in the Description Section of this Approval;

    b. do not result in an increase of the Facility Production Limit above the level specified in the Description Section of this Approval; and

    c. result in compliance with the performance limits as specified in Condition 4.

2. Condition 2.1 does not apply to,

a. the addition of any new Equipment with Specific Operational Limits or to the Modification of any existing Equipment with Specific Operational Limits at the Facility; and

b. Modifications to the Facility that would be subject to the Environmental Assessment Act.

3. Condition 2.1 of this Approval shall expire ten (10) years from the date of this Approval, unless this Approval is revoked prior to the expiry date. The Company may apply for renewal of Condition 2.1 of this Approval by including an ESDM Report and an Acoustic Assessment Report that describes the Facility as of the date of the renewal application.

3. REQUIREMENT TO REQUEST AN ACCEPTABLE POINT OF IMPINGEMENT CONCENTRATION

1. Prior to making a Modification to the Facility that satisfies Condition 2.1.a. and 2.1.b., the Company shall prepare a proposed update to the ESDM Report to reflect the proposed Modification.

2. The Company shall request approval of an Acceptable Point of Impingement Concentration for a Compound of Concern if the Compound of Concern is not identified in the ACB list as belonging to the category "Benchmark 1" and a proposed update to an ESDM Report indicates that one of the following changes with respect to the concentration of the Compound of Concern may occur:

   a. The Compound of Concern was not a Compound of Concern in the previous version of the ESDM Report and

      i. the concentration of the Compound of Concern exceeds the concentration set out for the contaminant in the ACB list; or

      ii. the Compound of Concern is not identified in the ACB list; or

   b. The concentration of the Compound of Concern in the updated ESDM Report exceeds the higher of,

      i. the most recent Acceptable Point of Impingement Concentration, and

      ii. the concentration set out for the contaminant in the ACB list,if the contaminant is identified in that document.

3. The request required by Condition 3.2 shall propose a concentration for the Compound of Concern and shall contain an assessment, performed by a Toxicologist, of the likelihood of the proposed concentration causing an adverse effect at Points of Impingement.

4. If the request required by Condition 3.2 is a result of a proposed Modification described in Condition 3.1, the Company shall submit the request, in writing, to the Director at least 30 days

prior to commencing to make the Modification. The Director shall provide written confirmation of receipt of this request to the Company.

5. If a request is required to be made under Condition 3.2 in respect of a proposed Modification described in Condition 3.1, the Company shall not make the Modification mentioned in Condition 3.1 unless the request is approved in writing by the Director.

6. If the Director notifies the Company in writing that the Director does not approve the request, the Company shall,

   a. revise and resubmit the request; or

   b. notify the Director that it will not be making the Modification.

7. The re-submission mentioned in Condition 3.6 shall be deemed a new submission under Condition 3.2.

8. If the Director approves the request, the Company shall update the ESDM Report to reflect the Modification.

9. Condition 3 does not apply if Condition 2.1 has expired.

4. PERFORMANCE LIMITS

1. Subject to Condition 4.2, the Company shall not discharge or cause or permit the discharge of a Compound of Concern into the air if,

   a. the Compound of Concern is identified in the ACB list as belonging to the category "Benchmark 1" and the discharge results in the concentration at a Point of Impingement exceeding the Benchmark 1 concentration; or

   b. the Compound of Concern is not identified in the ACB list as belonging to the category “Benchmark 1” and the discharge results in the concentration at a Point of Impingement exceeding the higher of,

      i. if an Acceptable Point of Impingement Concentration exists, the most recent Acceptable Point of Impingement Concentration, and

      ii. the concentration set out for the contaminant in the ACB list, if the contaminant is identified in that document.

2. Condition 4.1 does not apply if the benchmark set out in the ACB list has a 10-minute averaging period and no ambient monitor indicates an exceedance at a Point of Impingement where human activities regularly occur at a time when those activities regularly occur.

3. The Company shall ensure:

    a. at all times, that the noise emissions from the Facility comply with the limits set in Ministry Publication NPC-300; and

    b. that the Noise Control Measures are properly maintained and continue to provide the acoustical performance outlined in the Acoustic Assessment Report.

4. The Company shall, at all times, ensure that the vibration emissions from the Facility comply with the limits set out in Ministry Publication NPC-207.

5. The Company shall operate any Equipment with Specific Operational Limits approved by this Approval in accordance with the Original ESDM Report.

5. DOCUMENTATION REQUIREMENTS

1. The Company shall maintain an up-to-date Log.

2. No later than March 31 in each year, the Company shall update the Acoustic Assessment Report and shall update the ESDM Report in accordance with section 26 of O. Reg. 419/05 so that the information in the reports is accurate as of December 31 in the previous year.

3. The Company shall make the Emission Summary Table (see section 27 of O. Reg. 419/05) and Acoustic Assessment Summary Table available for examination by any person, without charge, by posting it on the Internet or by making it available during regular business hours at the Facility.

4. The Company shall, within three (3) months after the expiry of Condition 2.1 of this Approval, update the ESDM Report and the Acoustic Assessment Report such that the information in the reports is accurate as of the date that Condition 2.1 of this Approval expired.

5. Conditions 5.1 and 5.2 do not apply if Condition 2.1 has expired.

6. WRITTEN SUMMARY FORM

1. Subject to Condition 6.2, the Company shall prepare, and make available to the Ministry upon request, no later than June 30 of each year, a Written Summary Form signed by the Highest Ranking Person.
2. Condition 6.1 does not apply if:
    a. Condition 2.1 has expired; and
    b. the Written Summary Form has been completed for the year in which Condition 2.1 expired.

7. OPERATION AND MAINTENANCE

1. The Company shall prepare and implement, not later than three (3) months from the date of this Approval, operating procedures and maintenance programs for all Processes with Significant Environmental Aspects, which shall specify as a minimum:

    a. frequency of inspections and scheduled preventative maintenance;

    b. procedures to prevent upset conditions;

    c. procedures to minimize all fugitive emissions;

    d. procedures to prevent and/or minimize odorous emissions;

    e. procedures to prevent and/or minimize noise emissions; and

    f. procedures for record keeping activities relating to the operation and maintenance programs.

2. The Company shall ensure that all Processes with Significant Environmental Aspects are operated and maintained in accordance with this Approval, the operating procedures and maintenance programs.

8. COMPLAINTS RECORDING AND REPORTING

1. If at any time, the Company receives an environmental complaint from the public regarding the operation of the Equipment approved by this Approval, the Company shall take the following steps:

    a. Record and number each complaint, either electronically or in a log book. The record shall include the following information: the time and date of the complaint and incident to which the complaint relates, the nature of the complaint, wind direction at the time and date of the incident to which the complaint relates and, if known, the address of the complainant.

    b. Notify the District Manager of the complaint within two (2) business days after the complaint is received, or in a manner acceptable to the District Manager.

    c. Initiate appropriate steps to determine all possible causes of the complaint, and take the necessary actions to appropriately deal with the cause of the subject matter of the complaint.

    d. Complete and retain on-site a report written within five (5) business days of the complaint date. The report shall list the actions taken to appropriately deal with the cause of the complaint and set out steps to be taken to avoid the recurrence of similar incidents.

9. RECORD KEEPING REQUIREMENTS

1. Any information requested by any employee in or agent of the Ministry concerning the Facility and its operation under this Approval, including, but not limited to, any records required to be kept by this Approval, shall be provided to the employee in or agent of the Ministry, upon request **,** in a timely manner.

2. Unless otherwise specified in this Approval, the Company shall retain, for a minimum of five (5) years from the date of their creation all reports, records and information described in this Approval, including,

    a. a copy of the Original ESDM Report and each updated version;

    b. a copy of each version of the Acoustic Assessment Report;

    c. supporting information used in the emission rate calculations performed in the ESDM Reports and Acoustic Assessment Reports;

    d. the records in the Log;

    e. copies of each Written Summary Form prepared under Condition 6.1 of this Approval;

    f. records of maintenance, repair and inspection of Equipment related to all Processes with Significant Environmental Aspects; and

    g. all records related to environmental complaints made by the public as required by Condition 8 of this Approval.

10. CHANGE OF OWNERSHIP

1. The Company shall notify the Director in writing, and forward a copy of the notification to the District Manager, within thirty (30) days of the occurrence of any of the following changes to Facility operations:

    a. the ownership of the Facility;

    b. the operator of the Facility;

    c. the address of the Company;

    d. the partners, where the Company is or any time becomes a partnership and a copy of the most recent declaration filed under the Business Names Act, R.S.O. 1990, c. B.17, shall be included in the notification; or

    e. the name of the corporation where the Company is or at any time becomes a corporation,

other than a municipal corporation, and a copy of the most current information filed under the Corporations Information Act, R.S.O. 1990, c. C.39, shall be included in the notification.

2. In the event of any change in ownership of the Facility, the Company shall notify the successor of the existence of this Approval and provide the successor with a copy of this Approval, and the Company shall provide a copy of the notification to the District Manager and the Director.

11. REVOCATION OF PREVIOUS APPROVALS

1. This Approval replaces and revokes all Certificates of Approval (Air) issued under section 9 EPA and Environmental Compliance Approvals issued under Part II.1 EPA to the Facility in regards to the activities mentioned in subsection 9(1) of the EPA and dated prior to the date of this Approval.

SCHEDULE A

Supporting Documentation

1. Environmental Compliance Approval Application, dated January 31, 2024, signed by Steve Narasnek and submitted by the Company;

2. Emission Summary and Dispersion Modelling Report, prepared by Stantec Consulting Ltd. and dated February 12, 2024;

3. Emails dated January 20, March 5, March 7 and March 12, 2025 from Boris Chen of Stantec Consulting Ltd.;

4. Acoustic Assessment Report, prepared by Stantec Consulting Ltd., dated June 20, 2024 and signed by Jihyun Cho; and

5. Letter prepared by Stantec Consulting Ltd., dated November 14, 2024 and signed by Jihyun Cho.

The reasons for the imposition of these terms and conditions are as follows:

1. GENERAL
Condition No. 1 is included to require the Approval holder to build, operate and maintain the Facility in accordance with the Supporting Documentation in Schedule A considered by the Director in issuing this Approval.

2. OPERATIONAL FLEXIBILITY, REQUIREMENT TO REQUEST AN ACCEPTABLE POINT OF IMPINGEMENT CONCENTRATION AND PERFORMANCE LIMITS

Conditions No. 2, 3 and 4 are included to limit and define the Modifications permitted by this Approval, and to set out the circumstances in which the Company shall request approval of an Acceptable Point of Impingement Concentration prior to making Modifications. The holder of the Approval is approved for operational flexibility for the Facility that is consistent with the description of the operations included with the application up to the Facility Production Limit. In return for the operational flexibility, the Approval places performance based limits that cannot be exceeded under the terms of this Approval. Approval holders will still have to obtain other relevant approvals required to operate the Facility, including requirements under other environmental legislation such as the Environmental Assessment Act.

3. DOCUMENTATION REQUIREMENTS

Condition No. 5 is included to require the Company to maintain ongoing documentation that demonstrates compliance with the performance limits as specified in Condition 4 of this Approval and allows the Ministry to monitor on-going compliance with these performance limits. The Company is required to have an up to date ESDM Report and Acoustic Assessment Report that describe the Facility at all times and make the Emission Summary Table and Acoustic Assessment Summary Table from these reports available to the public on an ongoing basis in order to maintain public communication with regard to the emissions from the Facility.

4. WRITTEN SUMMARY FORM

Condition No. 6 is included to require the Company to prepare, and make available to the Ministry upon request, a yearly Written Summary Form, to assist the Ministry with the review of the site's compliance with the EPA, the regulations and this Approval.

5. OPERATION AND MAINTENANCE

Condition No. 7 is included to require the Company to properly operate and maintain the Processes with Significant Environmental Aspects to minimize the impact to the environment from these processes.

6. COMPLAINTS RECORDING AND REPORTING PROCEDURE

Condition No. 8 is included to require the Company to respond to any environmental complaints regarding the operation of the Equipment, according to a procedure that includes methods for preventing recurrence of similar incidents and a requirement to prepare and retain a written report.

7. RECORD KEEPING REQUIREMENTS

Condition No. 9 is included to require the Company to retain all documentation related to this Approval and provide access to employees in or agents of the Ministry, upon request, so that the Ministry can determine if a more detailed review of compliance with the performance limits as specified in Condition 4 of this Approval is necessary.

8. CHANGE OF OWNERSHIP

Condition No. 10 is included to require the Company to notify/report to the Ministry so that compliance with the EPA, the regulations and this Approval can be verified.

9. REVOCATION OF PREVIOUS APPROVALS

Condition No. 11 is included to identify that this Approval replaces all Section 9 Certificate(s) of Approval and Part II.1 Approvals in regards to the activities mentioned in subsection 9(1) of the EPA and dated prior to the date of this Approval.

Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s). 1357-9SYQ4B issued on February 13, 2015.

In accordance with Section 139 of the *Environmental Protection Act,* you may by written notice served upon me, the Ontario Land Tribunal and in accordance with Section 47 of the *Environmental Bill of Rights,* 1993, the Minister of the Environment, Conservation and Parks, within 15 days after receipt of this notice, require a hearing by the Tribunal. The Minister of the Environment, Conservation and Parks will place notice of your appeal on the Environmental Registry. Section 142 of the *Environmental Protection Act* provides that the notice requiring the hearing ("the Notice") shall state:

a. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
b. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

Pursuant to subsection 139(3) of the *Environmental Protection Act,* a hearing may not be required with respect to any terms and conditions in this environmental compliance approval, if the terms and conditions are substantially the same as those contained in an approval that is amended or revoked by this environmental compliance approval.

The Notice should also include:

1. The name of the appellant;
2. The address of the appellant;
3. The environmental compliance approval number;
4. The date of the environmental compliance approval;
5. The name of the Director, and;
6. The municipality or municipalities within which the project is to be engaged in.

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

Registrar*
Ontario Land Tribunal
655 Bay Street, Suite 1500
Toronto, Ontario
M5G 1E5
OLT.Registrar@ontario.ca

and

The Minister of the Environment,
Conservation and Parks
777 Bay Street, 5th Floor
Toronto, Ontario
M7A 2J3

and

The Director appointed for the purposes of
Part II.1 of the *Environmental Protection Act*
Ministry of the Environment,
Conservation and Parks
135 St. Clair Avenue West, 1st Floor
Toronto, Ontario
M4V 1P5

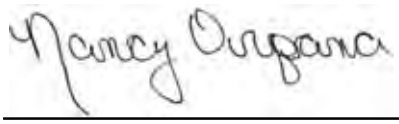
*** Further information on the Ontario Land Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349 or 1 (866) 448-2248, or www.olt.gov.on.ca**

This instrument is subject to Section 38 of the *Environmental Bill of Rights,* 1993, that allows residents of Ontario to

seek leave to appeal the decision on this instrument. Residents of Ontario may seek leave to appeal within 15 days from the date this decision is placed on the Environmental Registry. By accessing the Environmental Registry at https://ero.ontario.ca/, you can determine when the leave to appeal period ends.

The above noted activity is approved under s.20.3 of Part II.1 of the *Environmental Protection Act.*

DATED AT TORONTO this 16th day of March, 2025



Nancy E Orpana, P.Eng.
Director
appointed for the purposes of Part II.1 of the
Environmental Protection Act

AA/

c: District Manager, MECP Halton-Peel District Office
Boris Chen, Stantec Consulting Ltd.