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444 York Street, London

PRELIMINARY NOISE IMPACT STUDY

1000725093 Ontario Inc.

File 426046 | July 8, 2026

Document Control

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Issue	Date	Description
0	April 27, 2026	Draft
1	July 8. 2026	Final

Document Contents

Tables

Figures

Appendices

1 Introduction

Tatham Engineering Limited (Tatham) has been retained by 1000725093 Ontario Inc. to complete a Preliminary Noise Impact Study for the proposed retention of existing residential building and office-to-residential conversion located at 444 York Street (the development) in the City of London. The development includes the retention of an existing four-unit residential building and the conversion of an existing commercial building into a six-unit residential building.

1.1 PURPOSE

The purpose of this report is to evaluate transportation noise impacts on the development and to identify any required noise control measures or warning clauses to meet applicable Municipal and Provincial guidelines. In particular, this study will:

- Assess road traffic and railway noise impacts on the proposed development;
- Predict sound levels at the proposed development using MECP approved methods and models;
- Evaluate predicted sound levels against applicable MECP NPC-300 criteria; and
- Identify mitigation requirements, including ventilation provisions, building envelope design, barriers, and warning clauses, where needed to demonstrate compliance with relevant guidelines.

1.2 GUIDELINES AND BACKGROUND INFORMATION

This report was prepared in accordance with the applicable Municipal and Provincial guidelines, including the following:

- Ontario Ministry of the Environment, Conservation and Parks (MECP) publication NPC-300 “Environmental Noise Guidelines for Stationary and Transportation Sources – Approval and Planning” dated August 2013 (PIBS 9588e);
- The City of London’s Sound By-law-PW-12; and
- Federation of Canadian Municipalities (FCM) and Railway Association of Canada (RAC) Guidelines for New Development in Proximity to Railway Operations, May 2013.

2 Development and Noise Sources

2.1 PROPOSED DEVELOPMENT

The subject property is located at 444 York Street and consists of 962.7 m^2 of land, with frontage of the Commercial Building along York Street and frontage of the Residential Building along Burwell Street. Figure 1 is a Site Location Plan showing the location of the subject property.

The proposed development includes an office-to-residential conversion of a commercial building and the retention of an existing residential building. The address of the existing commercial building is 444 York Street, and the address of the existing residential building is 330 Burwell Street.

2.2 ZONING BY-LAW

The subject property is currently zoned as Restricted Service Commercial 2 (RSC2) and Restricted Service Commercial 4 (RSC4) under the City of London's Zoning By-law No. Z.-1. The zoning map is presented in Figure 2.

2.3 SURROUNDING LAND USE

As per the City of London's Zoning By-law No. Z.-1, surrounding land uses include:

- **North:** Zoned as Office Residential Zone (OR), with a density of 250 units per net residential hectare, and a maximum height of 68 metres.
- **East:** Zoned as Restricted Service Commercial 2 (RSC2) and Restricted Service Commercial 4 (RSC4).
- **South:** Zoned as Residential R11 Zone (R11).
- **West:** Zoned as Restricted Office 1 (RO1), Restricted Service Commercial 2 (RSC2) and Restricted Service Commercial 4 (RSC4).

2.4 SIGNIFICANT NOISE SOURCES

York Street is the main road bordering or located near the development and is considered a significant transportation noise source. Traffic noise from York Street is included in this assessment.

Other roads in the surrounding area are not considered significant noise sources due to their distance from the development or low traffic volumes and speeds. Local roads serving residential or recreational uses are expected to generate negligible noise impacts and, therefore, were not assessed.

The shared CN Rail and Via Rail railway is a principal main line for freight and passenger rail operations and is considered a significant noise source in the study area due to high expected traffic volumes and its proximity to the development.

The development is not located within an airport vicinity zone, so an aircraft or airport noise assessment is not required.

Although the site is located in proximity to a railway corridor, a vibration assessment was not undertaken as the proposed development involves retention of existing buildings with no modifications to the foundations.

3 Applicable Noise Criteria

3.1 ROAD AND RAIL TRANSPORTATION NOISE CRITERIA

The MECP publication NPC-300 sets limits for the sound level criteria for surface transportation noise sources. The sound performance criteria are expressed as a daytime 16-hr equivalent sound level ($L_{eq\ (16)}$ values, in dBA) for (7:00 – 23:00) and nighttime 8-hr equivalent sound level ($L_{eq\ (8)}$ values, in dBA) for (23:00 – 7:00). These limits are outlined based on the location of the Point of Receptions (PORs). Tables 1 and 2 summarize the applicable sound level limits for road and rail sources.

Table 1: Road and Rail Noise Level Limit for Outdoor Living Area (OLA)

AREA	TIME PERIOD	ROAD AND RAIL $L_{EQ\ (16)}$ LEVEL (dBA)
Individual or Common Outdoor Living Area	Daytime 7:00–23:00	55

Table 2: Road and Rail Noise Level Limit for Indoor Living Area

AREA	TIME PERIOD	ROAD L_{EQ} LEVEL (DBA)	RAIL L_{EQ} LEVEL (dBA)
Living/dining, den areas of residences, hospitals, nursing homes, schools, daycare centres, etc.	Daytime 7:00–23:00	45	40
Living/dining, den areas of residences, hospitals, nursing homes, etc. (except schools or daycare centres)	Nighttime 23:00–7:00	45	40
Sleeping Quarters	Daytime 7:00–23:00	45	40
Sleeping Quarters	Nighttime 23:00–7:00	40	35

The indoor sound level limits for rail noise are 5 dBA lower than the indoor sound level limits for road traffic noise to account for the high pass-by sound for short periods and low-frequency components of noise from diesel locomotives. This difference may result in a requirement for acoustically superior architectural components such as windows and walls, for railway noise. If required, the facade insulation for the road and rail noise will be calculated separately and then combined.

Noise control measures are not required if the sound levels at the exterior of the building meet the following requirements:

- Sound level estimated in the OLA is 55 dBA or less during the daytime;
- Sound level estimated in the building facade (plane of window) is 50 dBA or less for rail during daytime; and
- Sound level estimated in the building facade (plane of window) is 45 dBA or less for rail during nighttime.

If sound levels exceed the above-mentioned criteria, some measures included a combination of noise control measures, warning clauses, or superior building material should be implemented.

4 Transportation Noise Impact Assessment

4.1 TRAFFIC DATA AND FUTURE PROJECTIONS

York Street borders the south side of the subject property. It consists of a four-lane urban asphalt cross-section in the study area, with a posted speed limit of 50 km/h. York Street was included as a single road segment in the noise assessment and modelling.

Traffic volumes for York Street were derived from the City of London Open Data for the year 2023 and is projected to year 2036 assuming 2% annual increase. Based on this data, the AADT volumes in the study area are as follows:

- York Street
  - 2023 AADT: 20,000 vehicles/day
  - 2036 AADT: 25,872 vehicles/day

The vehicle split for all roads was estimated as follows:

- Cars: 97%
- Medium Trucks 1.5%
- Heavy Trucks: 1.5%

Overnight traffic volumes were estimated to represent approximately 4% of the AADT.

A summary of the road source parameters used in the noise assessment is provided in Table 3.

Table 3: Road Traffic Parameters for the Development

ROAD SEGMENT	ROAD SURFACE	LANE	ROAD GRADIENT (%)	2036 AADT (V/D)	SPEED LIMIT (KM/H)	DAY/NIGHT SPLIT %	CAR/MEDIUM TRUCK /HEAVY TRUCK SPLIT %
York Street	Asphalt	4	0.0%	25,872	50	96/4	97/1.5/1.5

4.2 RAIL TRAFFIC DATA AND FUTURE PROJECTIONS

The Via Rail and CN Rail traffic volumes and maximum speeds were obtained from a letter written by CN Rail, dated August 25, 2024, published on the City of London's open-source data on their Planning Application Site. Rail traffic data is included in Appendix B. 2036 rail traffic volumes were projected assuming 2.5% annual increase as requested by CN Rail. A summary of the Via

Rail, CN Rail-Freight, and CN Rail-Way Freight source parameters are included in Tables 4 through 6 below.

Table 4: Via Rail Traffic Data Projected to the year 2036

PARAMETER	VALUE
Track	Principal Main Line
Type of Train	Passenger
Maximum Speed (km/h)	112.7 (70 mph)
Number of Trains (Day: 7:00 – 23:00)	13.4
Number of Trains (Night: 23:00 – 7:00)	0
Maximum Number of Locomotives per Train	2
Maximum Number of Cars per Train	10

Table 5: CN Rail-Freight Traffic Data Projected to the year 2036

PARAMETER	VALUE
Track	Principal Main Line
Type of Train	Freight
Maximum Speed (km/h)	96.5 (60 mph)
Number of Trains (Day: 7:00 – 23:00)	16.1
Number of Trains (Night: 23:00 – 7:00)	2.7
Maximum Number of Locomotives per Train	4
Maximum Number of Cars per Train	140

Table 6: CN Rail-Way Freight Traffic Data Projected to the year 2036

PARAMETER	VALUE
Track	Principal Main Line
Type of Train	Way Freight
Maximum Speed (km/h)	96.5 (60 mph)
Number of Trains (Day: 7:00 – 23:00)	5.4
Number of Trains (Night: 23:00 – 7:00)	1.3
Maximum Number of Locomotives per Train	4
Maximum Number of Cars per Train	25

4.3 PROJECTED SOUND LEVELS

PORs with the highest potential for noise impacts from road traffic along York Street and rail traffic from the CN and Via railway were selected on building facades (Plane-of-Window, POW) to evaluate noise effects on the proposed development.

Eight PORs (POR1 to POR8) were selected to represent various site features, including height, direction and building. PORs were positioned to capture worst-case exposure to transportation noise, with POW PORs located on facades closest to the road and rail sources. There was no outdoor amenity area depicted in the site plan.

A summary of the selected PORs is provided in Table 7 and illustrated in Figure 3.

Table 7: Summary of Selected PORs

PORS	DESCRIPTION	HEIGHT (M)
POR1	444 York Street Residential Building 2nd Storey (Front Facade)	4.5
POR2	444 York Street Residential Building 2nd Storey (Side Facade)	4.5
POR3	444 York Street Residential Building 1st Storey (Front Facade)	1.5
POR4	444 York Street Residential Building 1st Storey (Side Facade)	1.5
POR5	330 Burwell Street Residential Building 2nd Storey (Front Facade)	4.5
POR6	330 Burwell Street Residential Building 2nd Storey (Side Facade)	4.5
POR7	330 Burwell Street Residential Building 1st Storey (Front Facade)	1.5
POR8	330 Burwell Street Residential Building 1st Storey (Side Facade)	1.5

The exterior noise levels due to roadway traffic were modelled using the MECP computer-based program STAMSON version 5.04. The model is based on the 'Ontario Road Noise Analysis Method for Environment and Transportation' (ORNAMENT, October 1989). Sixteen-hour daytime, $L_{eq\ (16)}$ (7:00-23:00) and eight-hour nighttime, $L_{eq\ (8)}$ (23:00-7:00) equivalent sound levels were calculated at each of the identified PORs.

The noise levels due to rail traffic were predicted in accordance with MECP guideline 'STEAM, Sound from Trains Environmental Analysis Method, 1990'. Noise modelling was completed using the MECP computer-based program STAMSON version 5.04. Sixteen-hour daytime, Leq (16) (7:00-23:00) and eight-hour nighttime Leq (8) (23:00-7:00) equivalent sound levels were calculated at each of the identified receptors. There are three at-grade railway crossings near the development located on Colborne Street, Maitland Street, and William Street. There is an anti-whistle by-law in effect at these railway crossings, so train whistle noise was not included in this noise assessment.

Sample model results are included in Appendix C.

A search of the City of London's Planning Application Site revealed a planned 38-storey mixed-use development located at 415 York Street. This location is situated southwest of the 444 York

Street development. Additionally, this site is in between the railway and the 444 York Street development, which will act as a noise barrier once constructed. This development was not included as a barrier in the noise modelling since it has not been constructed.

A summary of the noise impact results without any noise control measures is presented in Table 8.

Table 8: Projected Exterior Sound Levels for Transportation Noise

PORS	LOCATION	TIME OF DAY	PROJECTED SOUND LEVEL, dBA (ROAD & RAIL)	SOUND CRITERIA, dBA	NOISE CONTROL MEASURES	WARNING CLAUSES
POR1	2nd Storey 444 York St. Building (Front Facade)	7:00-23:00	70.7	60 dBA < $L_{eq\ (16)}$	Yes Note 1 & 2	Type D
		23:00-7:00	63.8	55 dBA < $L_{eq\ (8)}$	Yes Note 1 & 2	Type D
POR2	2nd Storey 444 York St. Building (Side Facade)	7:00-23:00	67.0	60 dBA < $L_{eq\ (16)}$	Yes Note 1 & 2	Type D
		23:00-7:00	60.5	55 dBA < $L_{eq\ (8)}$	Yes Note 1 & 2	Type D
POR3	1st Storey 444 York St. Building (Front Facade)	7:00-23:00	70.7	60dBA < $L_{eq\ (16)}$	Yes Note 1 & 2	Type D
		23:00-7:00	63.8	55 dBA < $L_{eq\ (8)}$	Yes Note 1 & 2	Type D
POR4	1st Storey 444 York St. Building (Side Facade)	7:00-23:00	67.0	60 dBA < $L_{eq\ (16)}$	Yes Note 1 & 2	Type D
		23:00-7:00	60.4	55 dBA < $L_{eq\ (8)}$	Yes Note 1 & 2	Type D
POR5	2nd Storey 330 Burwell St. Building (Front Facade)	7:00-23:00	71.0	60 dBA < $L_{eq\ (16)}$	Yes Note 1 & 2	Type D
		23:00-7:00	64.2	55 dBA < $L_{eq\ (8)}$	Yes Note 1 & 2	Type D
POR6	2nd Storey 330 Burwell St. Building (Side Facade)	7:00-23:00	68.9	60 dBA < $L_{eq\ (16)}$	Yes Note 1 & 2	Type D
		23:00-7:00	62.6	55 dBA < $L_{eq\ (8)}$	Yes Note 1 & 2	Type D
POR7	1st Storey 330 Burwell St.	7:00-23:00	70.8	60 dBA < $L_{eq\ (16)}$	Yes Note 1 & 2	Type D

PORS	LOCATION	TIME OF DAY	PROJECTED SOUND LEVEL, dBA (ROAD & RAIL)	SOUND CRITERIA, dBA	NOISE CONTROL MEASURES	WARNING CLAUSES
	Building (Front Facade)	23:00-7:00	64.0	55 dBA < $L_{eq\ (8)}$	Yes Note 1 & 2	Type D
POR8	1st Storey 330 Burwell St. Building (Side Facade)	7:00-23:00	68.9	60 dBA < $L_{eq\ (16)}$	Yes Note 1 & 2	Type D
		23:00-7:00	62.6	55 dBA < $L_{eq\ (8)}$	Yes Note 1 & 2	Type D

Notes:

1. The installation of central air conditioning is required to allow windows and doors to remain closed, thereby ensuring that indoor sound levels are within the City's and MECP sound level limits. The location and installation of the outdoor air conditioning device should comply with sound level limits of Publication NPC-216, and guidelines contained in Environmental Noise Guidelines for Installation of Residential Air Conditioning Devices.
2. If the nighttime sound level outside the bedroom or living/dining room windows exceeds 55 dBA for rail or the daytime sound level outside the bedroom or living/dining room windows exceeds 60 dBA for rail, building components including windows, walls and doors, where applicable, need to be designed so that indoor sound levels comply with the sound level limits in Table C-2 of NPC-300. The acoustical performance of the building components (windows, doors, and walls) needs to be specified.

5 Discussion and Noise Control Measures

5.1 OUTDOOR LIVING AREA NOISE CONTROL MEASURES

The proposed development does not include any outdoor living areas (OLA); therefore, OLA noise assessment and associated criteria are not applicable.

5.2 INDOOR LIVING SPACE VENTILATION REQUIREMENTS

The results of the STAMSON and STEAM modelling indicated that the road and rail transportation-related sound levels at the facades of the proposed buildings are projected to exceed NPC-300 sound level criteria at the plane of window (POW).

The predicted noise levels at these facades trigger ventilation requirements for noise control measures and warning clauses to maintain acceptable indoor sound levels.

Therefore, the following measures are recommended:

- The installation of central air conditioning in all units of both buildings.
- Warning Clause Type D is recommended to be included in all purchase and lease agreements for all units of both buildings.

5.3 BUILDING FACADE CONSTRUCTION

If the nighttime sound level emitted from rail noise outside bedroom or living/dining room windows exceed 55 dBA, or the daytime sound level outside bedroom or living/dining room windows exceed 60 dBA, building components – including windows, walls, and doors – must be designed to achieve the indoor sound level limits in Table 2. The required acoustic performance specifications for these components must be provided.

Predicted rail noise levels at selected Plane of Window (POW) receptors exceed the applicable nighttime sound level limit of 55 dBA and daytime sound level limit of 60 dBA. In accordance with MECP NPC-300, exterior walls, windows, and doors must be designed to achieve indoor sound levels that meet the limits in Table C-2 of the NPC-300.

Exterior Wall Construction

The required STC rating for wall assemblies were determined from the calculated AIF for the worst-case facades. For the front facade, the required AIF is 43 dBA, resulting in a minimum wall STC of 46.

Table 9: Preliminary STC Requirements for Exterior Walls

LOCATION	REQUIRED AIF (DBA)	MINIMUM REQUIRED STC	WALL ASSEMBLY
Front of Buildings	43	46	EW3

Exterior Door Construction

Exterior doors facing the railway should have an STC rating meeting or exceeding the wall STC requirements for the associated facade. Doors on other facades may meet the Ontario Building Code (OBC) minimum requirements. All exterior doors must be properly weather-sealed to reduce air infiltration.

Exterior Window Construction

The minimum STC ratings for window glazing were determined from the calculated AIF for the worst-case facades. For the front facade, the required AIF is 43 dBA, resulting in a minimum window STC of 39. Table 10 summarizes the preliminary window STC requirements.

Table 10: Preliminary STC Requirements for Window Glazing

LOCATION	REQUIRED AIF (dBA)	MINIMUM REQUIRED STC	WINDOW ASSEMBLY
Front of Buildings	43	39	Double glazing (various glass thickness/interpane space)

The wall and window STC requirements are preliminary assessment results based on the existing floor plan. A detailed noise study is required when the architectural exterior and interior drawings, floor plans, and building elevations are available. The detailed assessment should include all facades and not be limited to the front facade.

5.4 WARNING CLAUSES

The following warning clauses are recommended for future sale or lease agreements, if applicable.

5.4.1 CN and Via Rail Warning Clause

Requirement

CN & Via Rail warning clause is required for all sensitive developments located within 300 m of their mainlines.

Applicability

For this development, the CN & Via Rail warning clause is recommended for all units in both future residential buildings as they are all within 300 m of the railway.

Warning Clause – CN & Via Rail Railway Operations

"Canadian National Railway Company (CN) and Via Rail Canada Inc. (Via), and its assigns and successors in interest has or have a right-of-way within 300 m from the land the subject hereof. There may be alterations to or expansions of the rail facilities on such right-of-way in the future including the possibility that railway or their assigns or successors as aforesaid may expand their operations, which expansion may affect the living environment of the residents in the vicinity, notwithstanding the inclusion of any noise and vibration attenuating measures in the design of the development and individual buildings. CN & Via will not be responsible for any complaints or claims arising from use of such facilities and/or operations on, over or under the aforesaid right-of-way."

5.4.2 Type D Warning Clause

Requirement

For Plane of Window locations where daytime sound levels exceed 60 dBA and where nighttime sound levels exceed 55 dBA, installations of central air conditioning should be implemented with a Warning Clause Type D included in the purchase/lease agreements.

Applicability

For this development, Warning Clause Type D is recommended for all units in both future residential buildings as they all exceed the limit threshold.

Warning Clause – Type D

"This dwelling unit has been supplied with a central air conditioning system which will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the sound level limits of the Municipality and the Ministry of the Environment."

6 Impact of the Development on Surrounding Environment and on Itself

Based on the noise environment of the area, the proposed development is not expected to result in adverse impact on the neighbouring properties.

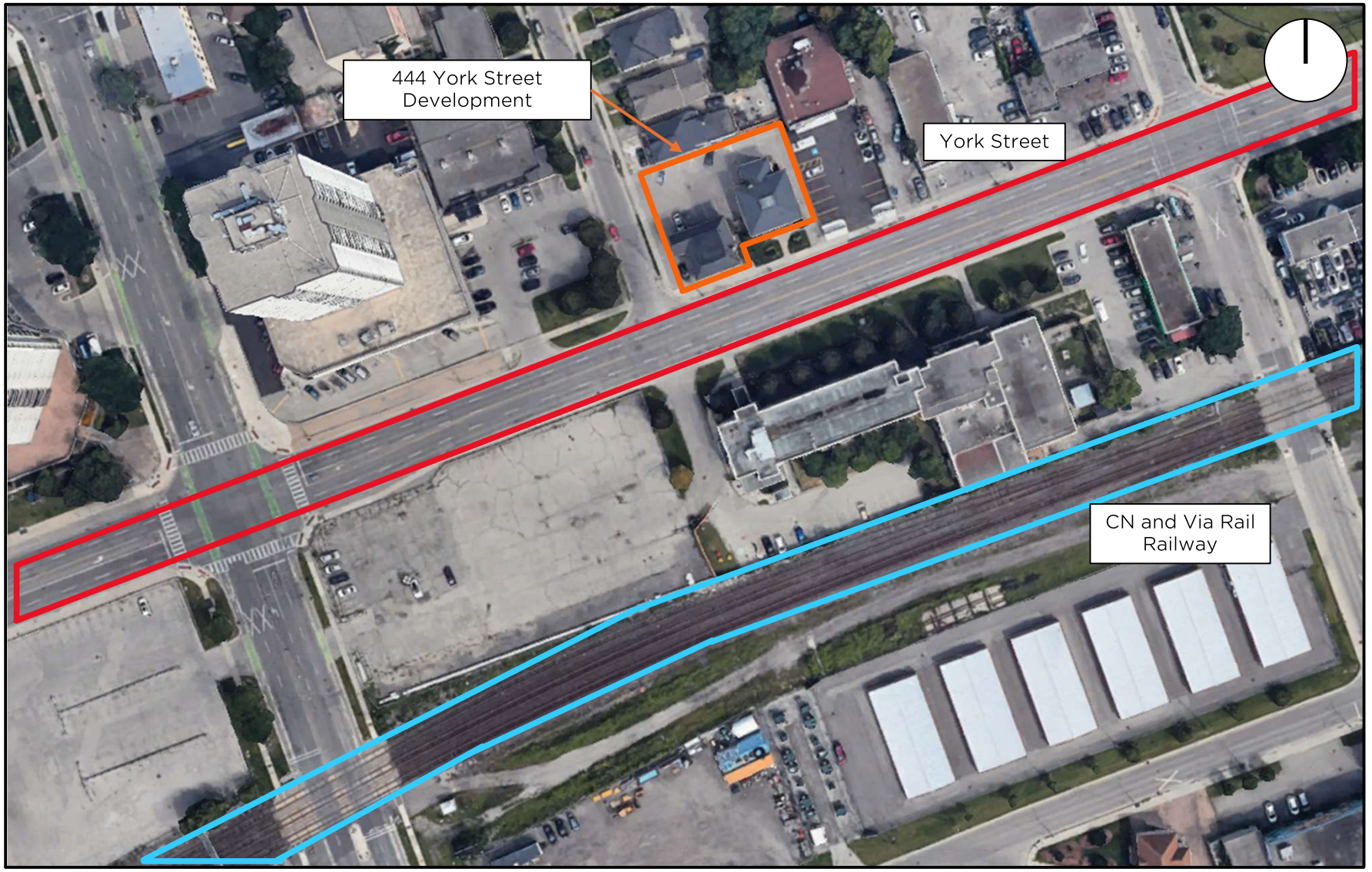
Air conditioning systems should be designed, selected, and installed to meet the requirements of NPC-216 – *Residential Air Conditioning Devices.*

7 Summary

A Preliminary Noise Impact Study was conducted for the proposed development in London, Ontario, to assess the environmental noise from transportation sources and identify necessary mitigation measures in compliance with MECP NPC-300 guidelines, the City of London's Sound By-law-PW-12, and the Federation of Canadian Municipalities (FCM) and Railway Association of Canada (RAC) Guidelines for New Development in Proximity to Railway Operations.

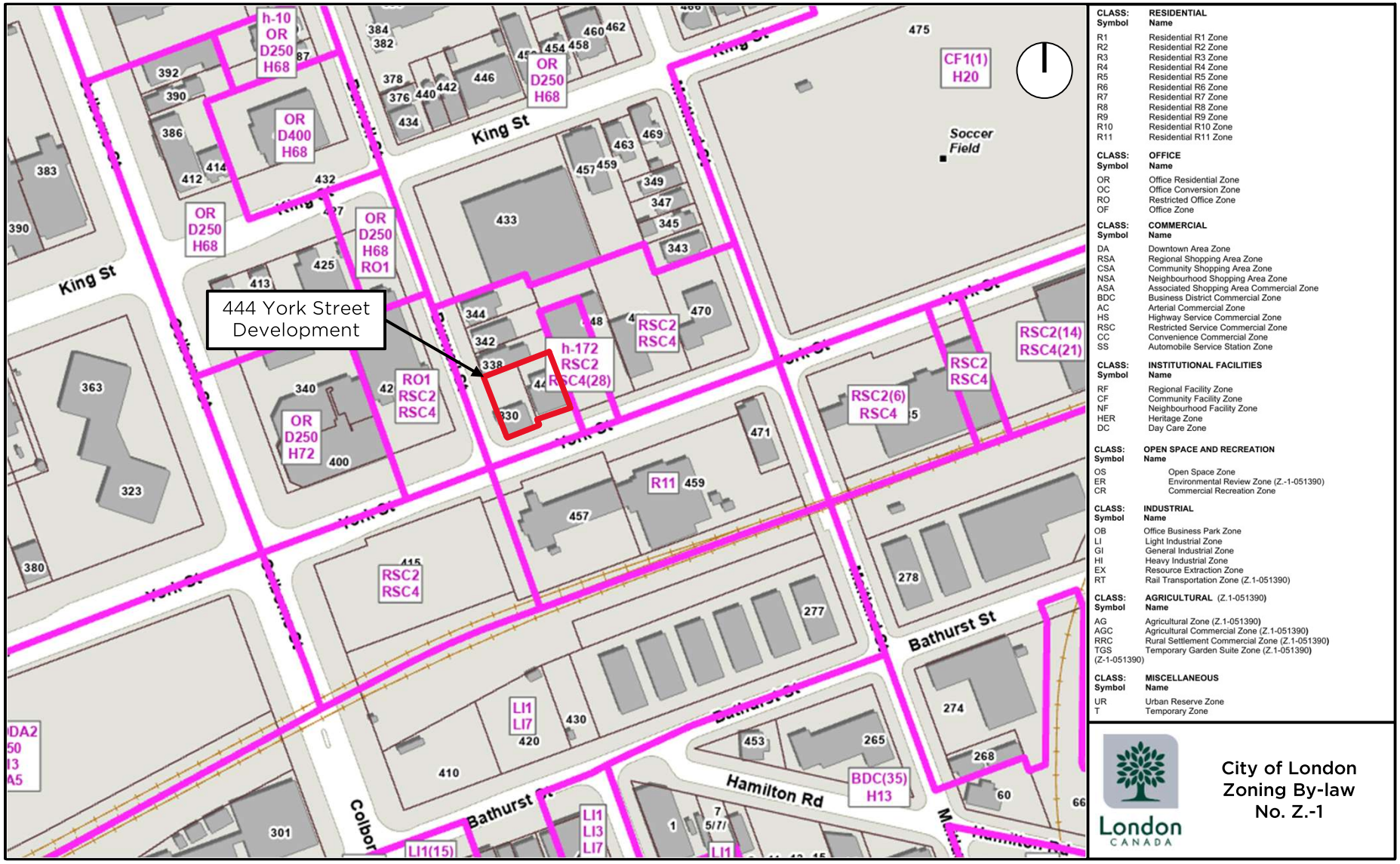
Road and Rail Transportation Noise

- Road traffic from York Street was modelled for projected 2036 volumes.
- Rail traffic from the CN & Via Rail corridors was modelled for projected 2036 volumes.
- The plane of window (POW) sound levels at all units exceed 60 dBA (daytime) and 55 dBA (nighttime). These units require:
  - The installation of central air conditioning, allowing windows to remain closed for noise control.
  - Type D warning clauses in purchase/lease agreements.
  - Acoustic upgrades to exterior walls, windows, and doors to comply with indoor sound level limits. Building components must meet specific STC performance targets based on calculated Acoustical Insulation Factors (AIF).
- CN & Via Rail warning clause is required for all sensitive developments located within 300 m of their mainlines. Since the development is located within this distance, the warning clause should be included in purchase/lease agreements.
- A detailed noise study is required when the architectural exterior and interior drawings, floor plans, and building elevations are available. The detailed assessment should include determining the required acoustical performance of all facades' elements.



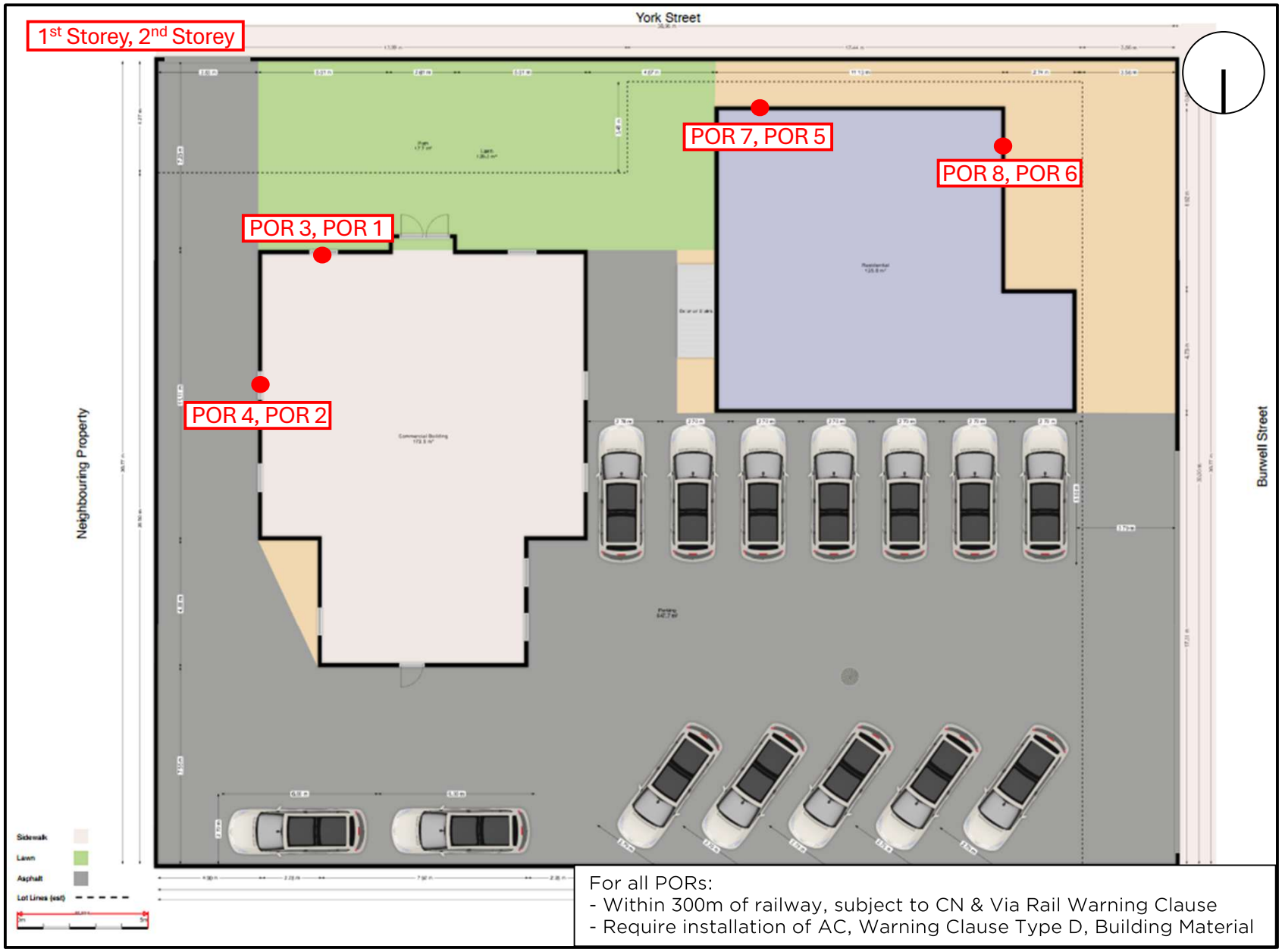
1000725093 Ontario Inc – 444 York Street, London – Noise Impact Study

Figure 1: Site Plan and Surrounding Environment



1000725093 Ontario Inc– 444 York Street, London – Noise Impact Study

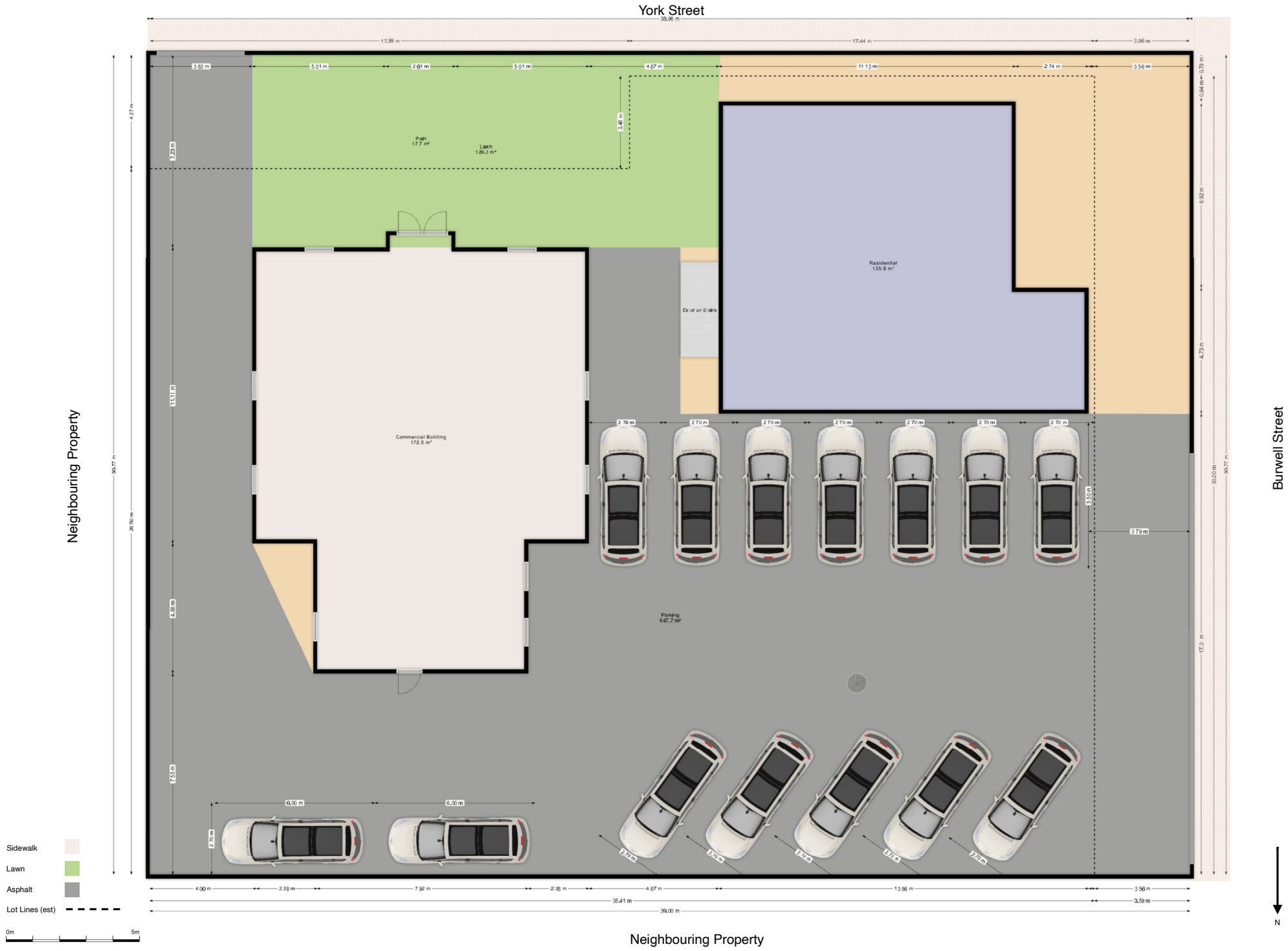
Figure 2: Zoning Plan (Development and Surrounding Area)



1000725093 Ontario Inc– 444 York Street, London – Noise Impact Study

Figure 3: Road and Rail Noise Receptor Locations and Assessment Results

Appendix A:
Development Site Plan


York Street
Neighbouring Property
Burwell Street
Neighbouring Property
N
Path
17.7 m²
Lawn
129.2 m²
Residential
135.6 m²
Exterior Stairs
Commercial Building
172.5 m²
Parking
647.7 m²
Sidewalk
Lawn
Asphalt
Lot Lines (est)
0m
5m

Appendix B:
CN & Via Rail Traffic Data

Dear Darcie:

Re: Train Traffic Data – CN Dundas Subdivision near Colborne St in London, ON

The following is provided in response to Michael Lafortune's 2024/07/29 request for information regarding rail traffic in the vicinity of Colborne Street in London at approximately Mile 77.66 on CN's Dundas 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	12	140	60	4
Way Freight	4	25	60	4
Passenger	10	10	70	2

	2300-0700			
Type of Train	Volumes	Max.Consist	Max. Speed	Max. Power
Freight	2	140	60	4
Way Freight	1	25	60	4
Passenger	0	10	70	2

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

Except where anti-whistling bylaws are in effect, engine-warning whistles and bells are normally sounded at all at-grade crossings. There are four (4) at-grade crossing in the immediate vicinity of the study area at Mile 76.84 Rectory St., Mile 77.36 William Street Xing, Mile 77.51 Maitland Street Xing and Mile 77.66 Colborne Street. Anti-whistling bylaws are in effect at these crossings. 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 ten (10) switches located at Mile 76.67, 76.70, 76.71, 76.78, 76.83, 77.51, 77.49 77.42, 77.85, 78.20 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

Appendix C:
Sample STAMSON Model Output

STAMSON 5.0 NORMAL REPORT Date: 17-04-2026 11:36:59
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: por1.te Time Period: Day/Night 16/8 hours
Description: 444 York St Residential 2nd Storey Front Facade

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

Train Type	Trains	Speed (km/h)	# loc /Train	# Cars /Train	Eng type	Cont weld
1.	13.4/0.0	113.0	2.0	10.0	Diesel	Yes

Data for Segment # 1: Via Rail (day/night)

```
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  78.00 / 78.00  m
Receiver height           :   4.50 / 4.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
No Whistle
Barrier angle1            : -47.00 deg   Angle2 : 41.00 deg
Barrier height            :  12.00 m
Barrier receiver distance :  42.00 / 42.00  m
Source elevation          :   0.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00
```

↑

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

Train Type	Trains	Speed (km/h)	# loc /Train	# Cars /Train	Eng type	Cont weld
1.	16.1/2.7	97.0	4.0	140.0	Diesel	Yes

Data for Segment # 2: CN Freight (day/night)

```
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  78.00 / 78.00  m
Receiver height           :   4.50 / 4.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
No Whistle
```

```
Barrier angle1            : -47.00 deg   Angle2 : 41.00 deg
Barrier height            :  12.00 m
Barrier receiver distance :  42.00 / 42.00  m
Source elevation          :   0.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00
```

↟

```
Rail data, segment # 3: CN Way-Frght (day/night)
-----------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
  1.             !   5.4/1.3   !  97.0 !  4.0 ! 25.0 !Diesel! Yes

Data for Segment # 3: CN Way-Frght (day/night)
-----------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  78.00 / 78.00  m
Receiver height           :   4.50 / 4.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
No Whistle
Barrier angle1            : -47.00 deg   Angle2 : 41.00 deg
Barrier height            :  12.00 m
Barrier receiver distance :  42.00 / 42.00  m
Source elevation          :   0.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00
```

↟

```
Results segment # 1: Via Rail (day)
-----------------------------------

Barrier height for grazing incidence
-----------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       4.00 !        4.50 !        4.23 !         4.23
       0.50 !        4.50 !        2.35 !         2.35

LOCOMOTIVE (55.33 + 39.42 + 55.90) = 58.69 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90    -47   0.00  68.71  -7.16  -6.22   0.00   0.00   0.00  55.33
```

```
-------------------------------------------------------------------------
   -47     41   0.00  68.71  -7.16  -3.11   0.00   0.00 -19.02  39.42
-------------------------------------------------------------------------
    41     90   0.00  68.71  -7.16  -5.65   0.00   0.00   0.00  55.90
-------------------------------------------------------------------------

WHEEL (45.78 + 28.90 + 46.35) = 49.12 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90    -47   0.00  59.16  -7.16  -6.22   0.00   0.00   0.00  45.78
-------------------------------------------------------------------------
   -47     41   0.00  59.16  -7.16  -3.11   0.00   0.00 -19.99  28.90
-------------------------------------------------------------------------
    41     90   0.00  59.16  -7.16  -5.65   0.00   0.00   0.00  46.35
-------------------------------------------------------------------------

Segment Leq : 59.14 dBA

↟
Results segment # 2: CN Freight (day)
-------------------------------------

Barrier height for grazing incidence
-------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       4.00 !        4.50 !        4.23 !         4.23
       0.50 !        4.50 !        2.35 !         2.35

LOCOMOTIVE (62.74 + 46.83 + 63.31) = 66.10 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90    -47   0.00  76.12  -7.16  -6.22   0.00   0.00   0.00  62.74
-------------------------------------------------------------------------
   -47     41   0.00  76.12  -7.16  -3.11   0.00   0.00 -19.02  46.83
-------------------------------------------------------------------------
    41     90   0.00  76.12  -7.16  -5.65   0.00   0.00   0.00  63.31
-------------------------------------------------------------------------

WHEEL (56.33 + 39.44 + 56.89) = 59.67 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90    -47   0.00  69.71  -7.16  -6.22   0.00   0.00   0.00  56.33
-------------------------------------------------------------------------
   -47     41   0.00  69.71  -7.16  -3.11   0.00   0.00 -19.99  39.44
-------------------------------------------------------------------------
    41     90   0.00  69.71  -7.16  -5.65   0.00   0.00   0.00  56.89
-------------------------------------------------------------------------
```

Segment Leq : 66.99 dBA

↟
Results segment # 3: CN Way-Frght (day)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	4.50	4.23	4.23
0.50	4.50	2.35	2.35

LOCOMOTIVE (53.69 + 37.77 + 54.25) = 57.04 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-47	0.00	67.06	-7.16	-6.22	0.00	0.00	0.00	53.69
-47	41	0.00	67.06	-7.16	-3.11	0.00	0.00	-19.02	37.77
41	90	0.00	67.06	-7.16	-5.65	0.00	0.00	0.00	54.25

WHEEL (44.62 + 27.74 + 45.19) = 47.97 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-47	0.00	58.00	-7.16	-6.22	0.00	0.00	0.00	44.62
-47	41	0.00	58.00	-7.16	-3.11	0.00	0.00	-19.99	27.74
41	90	0.00	58.00	-7.16	-5.65	0.00	0.00	0.00	45.19

Segment Leq : 57.55 dBA

Total Leq All Segments: 68.05 dBA

↟
Results segment # 1: Via Rail (night)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	4.50	4.23	4.23
0.50	4.50	2.35	2.35

LOCOMOTIVE (-13.38 + -29.29 + -12.81) = 0.00 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-47	0.00	0.00	-7.16	-6.22	0.00	0.00	0.00	-13.38
-47	41	0.00	0.00	-7.16	-3.11	0.00	0.00	-19.02	-29.29
41	90	0.00	0.00	-7.16	-5.65	0.00	0.00	0.00	-12.81

WHEEL (-13.38 + -30.26 + -12.81) = 0.00 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-47	0.00	0.00	-7.16	-6.22	0.00	0.00	0.00	-13.38
-47	41	0.00	0.00	-7.16	-3.11	0.00	0.00	-19.99	-30.26
41	90	0.00	0.00	-7.16	-5.65	0.00	0.00	0.00	-12.81

Segment Leq : 0.00 dBA

↟

Results segment # 2: CN Freight (night)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	4.50	4.23	4.23
0.50	4.50	2.35	2.35

LOCOMOTIVE (58.00 + 42.09 + 58.57) = 61.35 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-47	0.00	71.38	-7.16	-6.22	0.00	0.00	0.00	58.00
-47	41	0.00	71.38	-7.16	-3.11	0.00	0.00	-19.02	42.09
41	90	0.00	71.38	-7.16	-5.65	0.00	0.00	0.00	58.57

WHEEL (51.58 + 34.70 + 52.15) = 54.93 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-47	0.00	64.96	-7.16	-6.22	0.00	0.00	0.00	51.58
-47	41	0.00	64.96	-7.16	-3.11	0.00	0.00	-19.99	34.70

```
-------------------------------------------------------------------------
    41     90   0.00  64.96  -7.16  -5.65   0.00   0.00   0.00  52.15
-------------------------------------------------------------------------

Segment Leq : 62.24 dBA

↟
Results segment # 3: CN Way-Frght (night)
-----------------------------------------

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       4.00 !        4.50 !        4.23 !         4.23
       0.50 !        4.50 !        2.35 !         2.35

LOCOMOTIVE (50.51 + 34.60 + 51.08) = 53.87 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90    -47   0.00  63.89  -7.16  -6.22   0.00   0.00   0.00  50.51
-------------------------------------------------------------------------
   -47     41   0.00  63.89  -7.16  -3.11   0.00   0.00 -19.02  34.60
-------------------------------------------------------------------------
    41     90   0.00  63.89  -7.16  -5.65   0.00   0.00   0.00  51.08
-------------------------------------------------------------------------

WHEEL (41.45 + 24.57 + 42.02) = 44.79 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90    -47   0.00  54.83  -7.16  -6.22   0.00   0.00   0.00  41.45
-------------------------------------------------------------------------
   -47     41   0.00  54.83  -7.16  -3.11   0.00   0.00 -19.99  24.57
-------------------------------------------------------------------------
    41     90   0.00  54.83  -7.16  -5.65   0.00   0.00   0.00  42.02
-------------------------------------------------------------------------

Segment Leq : 54.38 dBA

Total Leq All Segments: 62.90 dBA

↟
Road data, segment # 1: York Street (day/night)
-----------------------------------------------
Car traffic volume  : 24092/1004  veh/TimePeriod
Medium truck volume :   373/15    veh/TimePeriod
Heavy truck volume  :   373/15    veh/TimePeriod
Posted speed limit  :    50 km/h
Road gradient       :     0 %
```

```
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 1: York Street (day/night)
---------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  15.00 / 15.00  m
Receiver height           :   4.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

```
Results segment # 1: York Street (day)
--------------------------------------

Source height = 1.11 m

ROAD (0.00 + 67.30 + 0.00) = 67.30 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.00  67.30   0.00   0.00   0.00   0.00   0.00   0.00  67.30
-------------------------------------------------------------------------------

Segment Leq : 67.30 dBA

Total Leq All Segments: 67.30 dBA
```

```
Results segment # 1: York Street (night)
----------------------------------------

Source height = 1.10 m

ROAD (0.00 + 56.42 + 0.00) = 56.42 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.00  56.42   0.00   0.00   0.00   0.00   0.00   0.00  56.42
-------------------------------------------------------------------------------

Segment Leq : 56.42 dBA

Total Leq All Segments: 56.42 dBA
```

```
TOTAL Leq FROM ALL SOURCES (DAY): 70.70
```

(NIGHT): 63.78