

# **ENVIRONMENTAL NOISE ASSESSMENT -UPDATED-**

**PROPOSED MIXED-USE DEVELOPMENT  
640 LIVERPOOL ROAD  
CITY OF PICKERING**

**PREPARED FOR:**

**LIVERPOOL ROAD LIMITED PARTNERSHIP**

## EXECUTIVE SUMMARY

---

The Updated January 2026 Environmental Noise Assessment is issued to present the assessment of the proposed residential development and recommend any noise abatement features necessary to achieve sound levels acceptable to the City of Pickering, the Region of Durham and the Ministry of Environment, Conservation and Parks.

The transportation noise source having the potential to affect the living environment within the proposed development area includes Liverpool Road. The projected traffic volume on this noise source is used as input to the Stimson's 5.04 to generate the resultant sound levels. Copies of the correspondence regarding traffic data is included in Appendix 1 in this report.

The stationary noise sources of concern are the proposed mechanical equipment from the commercial building.

Recommended noise abatement measures are described in Sections 5.1, 5.2, 5.3 and 5.4 and summarized in Table 4 of this report and on the attached Figure 2. These measures include:

1. Provision for air conditioning is required for Blocks A and J (All Units).
2. Standard windows and exterior wall construction are sufficient for all units.
3. All applicable warning clauses shall be listed in the City of Pickering's Site Plan Agreement and also be inserted in the Agreements of Purchase and Sale or Lease and registered on title.
4. The occasional deliveries and garbage pickup are expected to occur during the daytime. The occasional deliveries and garbage pickup are generally excluded from the stationary source noise sources; however some activities may be audible at times.
4. Prior to the issuance of occupancy permits, the City's building inspector or a Professional Engineer qualified to perform acoustical engineering services in Ontario shall certify that the noise control measures have been properly installed and constructed.

## TABLE OF CONTENTS

---

	<b>PAGE</b>
<b>1.0 INTRODUCTION</b> .....	<b>1</b>
PURPOSE	
SITE DESCRIPTION AND LOCATION	
<b>2.0 SOUND LEVEL CRITERIA</b> .....	<b>2</b>
<b>3.0 NOISE SOURCES</b> .....	<b>3</b>
TABLE 1 LIVERPOOL ROAD TRAFFIC DATA	
<b>4.0 NOISE ASSESSMENT</b> .....	<b>4</b>
<b>4.1 ROAD TRAFFIC NOISE ASSESSMENT</b>	
TABLE 2 UNATTENUATED SOUND LEVELS	
<b>4.2 STATIONARY NOISE SOURCES ASSESSMENT</b> .....	<b>5</b>
EXISTING STATIONARY NOISE SOURCES	
TABLE 3 EXISTING STATIONARY NOISE SOURCES	
PROPOSED STATIONARY NOISE SOURCES	
<b>5.0 RECOMMENDED MITIGATION MEASURES</b> .....	<b>6</b>
<b>5.1 OUTDOOR MEASURES</b> .....	<b>6</b>
<b>5.2 VENTILATION REQUIREMENTS</b> .....	<b>5</b>
<b>5.3 BUILDING COMPONENTS</b> .....	<b>7</b>
<b>5.4 WARNING CLAUSES</b> .....	<b>8</b>
<b>6.0 SUMMARY OF NOISE MITIGATION MEASURES</b> .....	<b>9</b>
TABLE 4 SUMMARY OF NOISE MITIGATION MEASURES	
<b>7.0 RECOMMENDATIONS AND CONCLUSION</b> .....	<b>10</b>
RECOMMENDATIONS	
CONCLUSION	
FIGURE 1 .....	KEY PLAN
FIGURE 2 .....	SITE PLAN - NOISE MITIGATION MEASURES
FIGURE 3 .....	SURROUNDING STATIONARY NOISE SOURCES
APPENDIX 1.....	TRAFFIC DATA
APPENDIX 2.....	SOUND LEVEL CALCULATIONS
APPENDIX 3.....	SOUND LEVEL CRITERIA
APPENDIX 4.....	SAMPLE WINDOW AND EXTERIOR WALL CONFIGURATION

## 1.0 INTRODUCTION

---

### PURPOSE

A mixed-use development has been proposed by Liverpool Road Limited Partnership in the City of Pickering. This report is an analysis of future sound levels within the proposed development and describes the types and locations of noise mitigation measures which will be required based on the latest Site Plan dated December 2025 prepared by S&C Architects Inc.

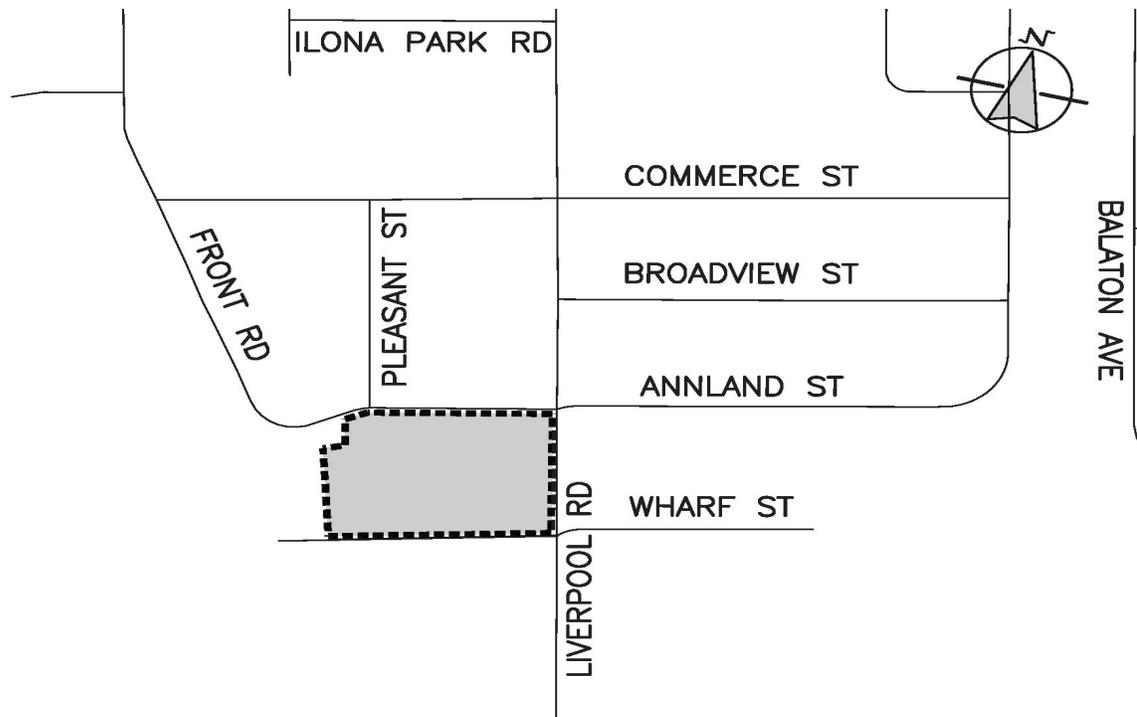
### SITE DESCRIPTION AND LOCATION

The development will consist of stacked and back to back residential townhouses, traditional townhouses blocks (total of 86 units) and a 3 storey mixed-use building with a commercial unit on at the ground floor and 5 apartment units on the remaining floors, a passive open space and local internal roads located west of Liverpool Road, north of Wharf Street and approximately 1.4km south of Bayly Street in the City of Pickering.

The surrounding land uses are existing residential developments, an open space to the west, and an existing restaurant and port further south.

### KEY PLAN

The location of the proposed development is further indicated by the Key Plan below.



### **KEY PLAN**

N.T.S.

**FIGURE 1**

## 2.0 SOUND LEVEL CRITERIA

---

The sound level descriptors ( $L_{eq}$  in dBA) are for 16 hours (daytime) and 8 hours (night-time) based on MECP Guideline NPC-300:

Outdoor Activity Areas (7 a.m. – 11 p.m.) – 16 Hr. Leq. = 55 dBA

If daytime outdoor sound levels at the backyards (outdoor activity areas) exceed 60 dBA, physical noise attenuation measures such as acoustical fences, increased building setbacks or reorientation of the buildings must be employed to reduce the sound levels. In some cases, outdoor sound levels may be allowed to exceed the above criteria by a maximum of 5 dBA. If such excesses occur, purchasers must be informed of the existence of potentially annoying sound levels by means of warning clauses registered on title.

Living and Dining Area and Bedroom (7 a.m.–11 p.m.) = 45 dBA Roads, 40 dBA Railways

Living and Dining Area (11 p.m.–7 a.m.) = 45 dBA Roads, 40 dBA Railways

Bedrooms (11 p.m. – 7 a.m.) = 40 dBA Roads, 35 dBA Railways

Appropriate building components such as walls, doors and windows are chosen with reference to the following. If daytime sound levels at the external dwelling walls are 65 dBA or less (roadways), and 60 dBA or less (railways), then the indoor sound level criteria described above will be achieved using standard (Ontario Building Code) construction methods and building components. If night-time sound levels are 60 dBA or less (roadways) and 55 dBA or less (railways), standard construction methods and building components can be utilized. If the external sound levels exceed the above criteria, then components having extra sound insulation properties may be required.

Ventilation requirements are determined with reference to the following. If night-time sound levels at the bedroom window of a dwelling unit are in the range of 50 to 60 dBA, the ventilation system must be designed to allow the optional installation of central air conditioning at the owner's discretion. If night-time sound levels are greater than 60 dBA, central air conditioning must be installed. If daytime sound levels at the living room/dining room windows are in the range of 55 to 65 dBA, the ventilation system must be designed to allow optional installation of central air conditioning. For daytime sound levels greater than 65 dBA, central air conditioning must be installed.

### STATIONARY SOURCES

As per the M.E.C.P. guidelines (Publication NPC-300), this development is considered to be a Class 2 area.

The noise produced by a stationary source at the plane of window for noise sensitive spaces is the energy equivalent sound level ( $L_{EQ}$ ), 50 dBA during daytime and evening time (0700-2300) or 45 dBA during night-time (2300-0700). For outdoor receptors, the energy equivalent sound level ( $L_{EQ}$ ) is 50 dBA during daytime (0700-2300) or 50 dBA during night-time (1900-2300).

### 3.0 NOISE SOURCES

---

#### ROAD TRAFFIC

As indicated on the attached Figure 1, the proposed residential townhouse development will be located west of Liverpool Road at approximately 1.4km south of Bayly Street in the City of Pickering. Noise generated by Liverpool Road has the potential to affect future development.

All other roads within or near this site are considered acoustically insignificant due to low traffic volumes and distance separation.

Traffic count information for Liverpool Road was obtained from the City of Pickering and projected to the year 2038 at 2% growth per year. The traffic data projected is summarized in Table 1 below:

<b>TABLE 1: LIVERPOOL ROAD TRAFFIC DATA</b>	
Projected Annual Average Daily Traffic *	5,520
Percent Trucks	4%
Heavy and Medium trucks ratio	50/50
Speed (km/hr)	40
Number of Lanes	2

\* Traffic volume projected to the year 2038 at 2% growth per year.

The proposed residential development is not impacted by aircraft and rail noise due to distance separation.

#### EXISTING STATIONARY NOISE SOURCES

There is an existing Restaurant and a Marine Travel Lift approximately 50m to the south. The restaurant operating hours are between 11:30 a.m. to 11:00 p.m. weekdays and 11:30 a.m. to 1:00 a.m. on Saturdays with approximately 1 delivery at the loading area per day. The deliveries are expected to occur during the daytime hours only.

The potential noise sources near the proposed townhouse development are: Mechanical roof top units located on the roof, Truck deliveries (loading activities) and the Marine Travel Lift.

#### PROPOSED STATIONARY NOISE SOURCES

The proposed commercial space at the ground level are expected to be retail/office. Mechanical equipment such as condenser units are expected to be located at ground level.

The occasional deliveries and garbage pickup are expected to occur during the daytime. The occasional deliveries and garbage pickup are generally excluded from the stationary source noise sources; however some activities may be audible at times.

## 4.0 NOISE ASSESSMENT

### 4.1 ROAD TRAFFIC NOISE ASSESSMENT

Figure 2 is based on the latest Site Plan dated December 2025 prepared by S&C Architects Inc. and show various noise analysis locations and noise mitigation measures within the proposed residential development.

Sound levels were calculated using the Ministry of Environment's Stinson 5.04 computer-based noise prediction model. The noise criteria and warning clauses are listed in Appendix 3.

Table 2 lists the unattenuated sound levels at various locations.

<b>TABLE 2: UNATTENUATED SOUND LEVELS</b>				
<b>LOCATIONS</b>	<b>DISTANCE TO CENTRELINE OF ROAD (m)</b>	<b>DAYTIME 16 Hr. Leq dBA</b>		<b>NIGHT-TIME 8 Hr. Leq dBA</b>
		<b>OUTDOOR LIVING AREA</b>	<b>DWELLING WALL</b>	<b>DWELLING WALL</b>
Block A (South Unit)				
Front Wall	16.0 <sup>1</sup>	-	57.45	50.92
Roof Top Terrace	18.0 <sup>1</sup>	56.25	-	-
Block J (South Unit)				
Front Wall	16.0 <sup>1</sup>	-	57.45	50.92
Roof Top Terrace	18.0 <sup>1</sup>	56.25	-	-
Block G (East Unit)				
Front Wall	42.0 <sup>1</sup>	-	48.20	41.66
Roof Top Terrace	44.0 <sup>1</sup>	<55	-	-

<sup>1</sup> Liverpool Road

## 4.2 STATIONARY NOISE SOURCES ASSESSMENT

### Noise Assessment

The Restaurant Roof Top Units (RTUs), loading area and the Marine Travel Lift activities have the potential to exceed the sound level limits at the proposed residential development.

#### Mechanical roof top units:

The mechanical roof top units are expected to operate at full capacity during the daytimes, and at 50% capacity during the night-times.

Analysis of the mechanical roof top units are based on the information obtained on-site for the roof top units, sound measurements and the specifications provided by the manufacturers. The mechanical roof tops of concern are the 3 "Carrier Model" condenser units, 2 "Carnes" fans, a "Tecumseh" condenser unit and an "En Mar Systems" Make-up air unit located on the east portion of the roof adjacent to an office area which is located at the west portion of the restaurant building.

In addition, other activities at the restaurant such as speakers have been taken into account for noise analysis purposes.

#### Loading area/Marine Travel Lift:

Based on on-site sound measurements, the delivery truck idling was measured to be 74 dBA at 3m from the truck. The deliveries are scheduled once per day during the daytimes with a 20minutes idling duration. The Marine Travel Lift has been assumed to operate several times a day seasonally during the spring and fall.

The following Table 3 summarizes the sound levels from the existing stationary noise sources at the proposed receptor locations:

<b>TABLE 3 - UNMITIGATED SOUND LEVELS, Leq 1 hour (dBA)</b>			
<b>RECEPTOR</b>	<b>DAYTIME/ EVENING (0700 - 2300)</b>	<b>NIGHTTIME (2300 - 0700)</b>	<b>Exceedance</b>
R1 (Unit 40– Front Wall)	41.4	38.3	No
R2 (Unit 44 – Front Wall)	40.8	37.8	No
R3 (Unit 51 –Front Wall)	43.8	36.6	No

Therefore, the total sound level from the restaurant mechanical roof top units, loading activities and the Marine Travel Lift is expected to be meet the M.O.E. sound level limits of 50dBA during the daytimes and 45dBA during the night-times at the building facades of the proposed townhouses.

## 5.0 RECOMMENDED NOISE MITIGATION MEASURES

---

### 5.1 OUTDOOR MEASURES

The designated outdoor amenity areas for all Stacked and Back to Back residential blocks (Blocks A, E, F, G, H, I, J) are expected to be the roof top terraces. The designated outdoor amenity area for the traditional townhouses (Blocks B, C, D) are expected to be the rear yards.

Based on the sound level results in Table 2, the outdoor sound levels at rear yards are expected to be 55 dBA or less in the absence of noise mitigative measures. The sound level at the roof top terraces for the remaining blocks are expected to be 56dBA or less.

Therefore, outdoor noise mitigation measure is not required for the residential blocks/units.

### 5.2 VENTILATION REQUIREMENTS

Ventilation requirements were determined using the sound levels at the building facades listed in Table 2 due to road traffic noise sources.

#### MANDATORY AIR CONDITIONERS

Based on the information in Table 2, no locations are expected to be above 65dBA during the daytime and/or above 60dBA during the nighttime. Therefore, mandatory air conditioning is not required for this residential development.

#### PROVISION FOR CENTRAL AIR CONDITIONERS

The following units must be constructed with a forced air heating system with ducting sized to accommodate a central air conditioning unit, in order to allow the homeowner the option of installing central air conditioning should he or she wish to do so in the future as per Table 2 sound level results.

- Blocks A and J (All Units)

The following warning clause Type C must be incorporated into the Development Agreement, which will be registered on title and should be included in all offers of purchase, sale and lease of the above locations:

Warning Clause Type C:

*“This unit was fitted with ducting sized to accommodate a central air conditioning unit. The installation of central air conditioning by the homeowner will allow windows and exterior doors to be kept closed, thereby achieving indoor sound levels within the limits recommended by the Ministry of Environment. (Note: The location and installation of the outdoor air conditioning device should be done so as to comply with noise criteria of MOE Publication NPC-216, Residential Air Conditioning Devices and thus minimize the noise impacts both on and in the immediate vicinity of the subject property).”*

### **5.3 BUILDING COMPONENTS**

Building components within the proposed development were analyzed using the STC (Sound Transmission Class) method recommended by the M.E.C.P. based on the latest architectural plans prepared by S&C Architects Inc.

#### DAYTIME SOUND LEVELS

For the worst-case location during daytime (Block A), a daytime sound level of 57 dBA was calculated due to road traffic.

To ensure acceptable daytime indoor sound levels, the building components must provide an STC rating of 20 for windows, STC 27 for exterior wall construction.

#### NIGHT-TIME SOUND LEVELS

For the worst-case location during night-time (Block A), a night-time sound level of 51 dBA was calculated.

To ensure acceptable nighttime indoor sound levels of 40 dBA from road noise sources, the building components must provide an STC rating of 17 for windows, STC 24 for exterior wall construction

#### BUILDING COMPONENT REQUIREMENTS

The minimum standard window and exterior wall construction of the Ontario Building Code meets STC 30 and STC 38, respectively. Therefore, standard windows and exterior wall construction are sufficient for all units.

#### WINDOWS

The following are some window configurations meeting an STC rating of 20:

- double glazing 4mm x 4mm thickness with 6mm air space or
- double glazing 3mm x 3mm thickness with 13mm air space or
- any other window type yielding a similar or greater STC rating

#### EXTERIOR WALLS

The following exterior wall constructions EW1 meet the STC 38 rating:

EW1            12.7mm gypsum board, vapour barrier and 38 x 89mm studs with 50mm (or thicker) mineral wool or fiberglass batts in interstud cavities, plus sheathing, 25mm air space and stucco/vinyl siding.

Sample window and exterior wall configurations are included in Appendix 4 for additional options.

## 5.4 WARNING CLAUSES

The following warning clauses Type A, C and E must be incorporated into the Development Agreement or future Site Plan Agreement as appropriate, which will be registered on title and included in all offers of purchase and sale or lease of the units listed below.

Warning Clause Type A:

*“Occupants are advised that sound levels due to increasing road traffic may occasionally interfere with some activities of the occupants as the sound level will exceed the noise criteria of the Ministry of the Environment”*

- Blocks A and J (All Units)

Warning Clause Type C:

*“This unit was fitted with ducting sized to accommodate a central air conditioning unit. The installation of central air conditioning by the homeowner will allow windows and exterior doors to be kept closed, thereby achieving indoor sound levels within the limits recommended by the Ministry of Environment. (Note: The location and installation of the outdoor air conditioning device should be done so as to comply with noise criteria of MOE Publication NPC-216, Residential Air Conditioning Devices and thus minimize the noise impacts both on and in the immediate vicinity of the subject property).”*

- Blocks A and J (All Units)

Warning Clause Type E

*“Occupants are advised that due to the proximity of the existing Restaurant, Marine Travel Lift and the proposed commercial activities from Block J, noise from the Restaurant, Marine Travel Lift and the proposed commercial activities may at times be audible.”*

- Blocks G, H, I, J (All Units)

## 6.0 SUMMARY OF NOISE MITIGATION MEASURES

The summary of noise abatement measures are listed in the following Table 4 identifying ventilation requirements, building components and warning clauses.

<b>TABLE 4: SUMMARY OF NOISE MITIGATION MEASURES</b>				
<b>LOCATIONS</b>	<b>VENTILATION REQUIREMENTS</b>	<b>BUILDING COMPONENTS</b>	<b>SOUND BARRIERS</b>	<b>WARNING CLAUSES</b>
Block A (All Units)	Provision for air conditioning	Windows: OBC* Walls: OBC	-	Type A, C
Block J (All Units)	Provision for air conditioning	Windows: OBC* Walls: OBC	-	Type A, C, E
Blocks G, H, I (All Units)	No Requirements	Windows: OBC* Walls: OBC	-	Type E
All remaining blocks/units	No Requirements			

\* Ontario Building Code Standard

## 7.0 RECOMMENDATIONS AND CONCLUSION

---

### RECOMMENDATIONS

1. Provision for air conditioning is required for Blocks A and J (All Units).
2. Standard windows and exterior wall construction are sufficient for all units.
3. All applicable warning clauses shall be listed in the City of Pickering's Development Agreement and also be inserted in the Agreements of Purchase and Sale or Lease and registered on title.
5. The occasional deliveries and garbage pickup are expected to occur during the daytime. The occasional deliveries and garbage pickup are generally excluded from the stationary source noise sources; however some activities may be audible at times.
5. Prior to the issuance of occupancy permits, the City's building inspector or a Professional Engineer qualified to perform acoustical engineering services in Ontario shall certify that the noise control measures have been properly installed and constructed.

### CONCLUSION

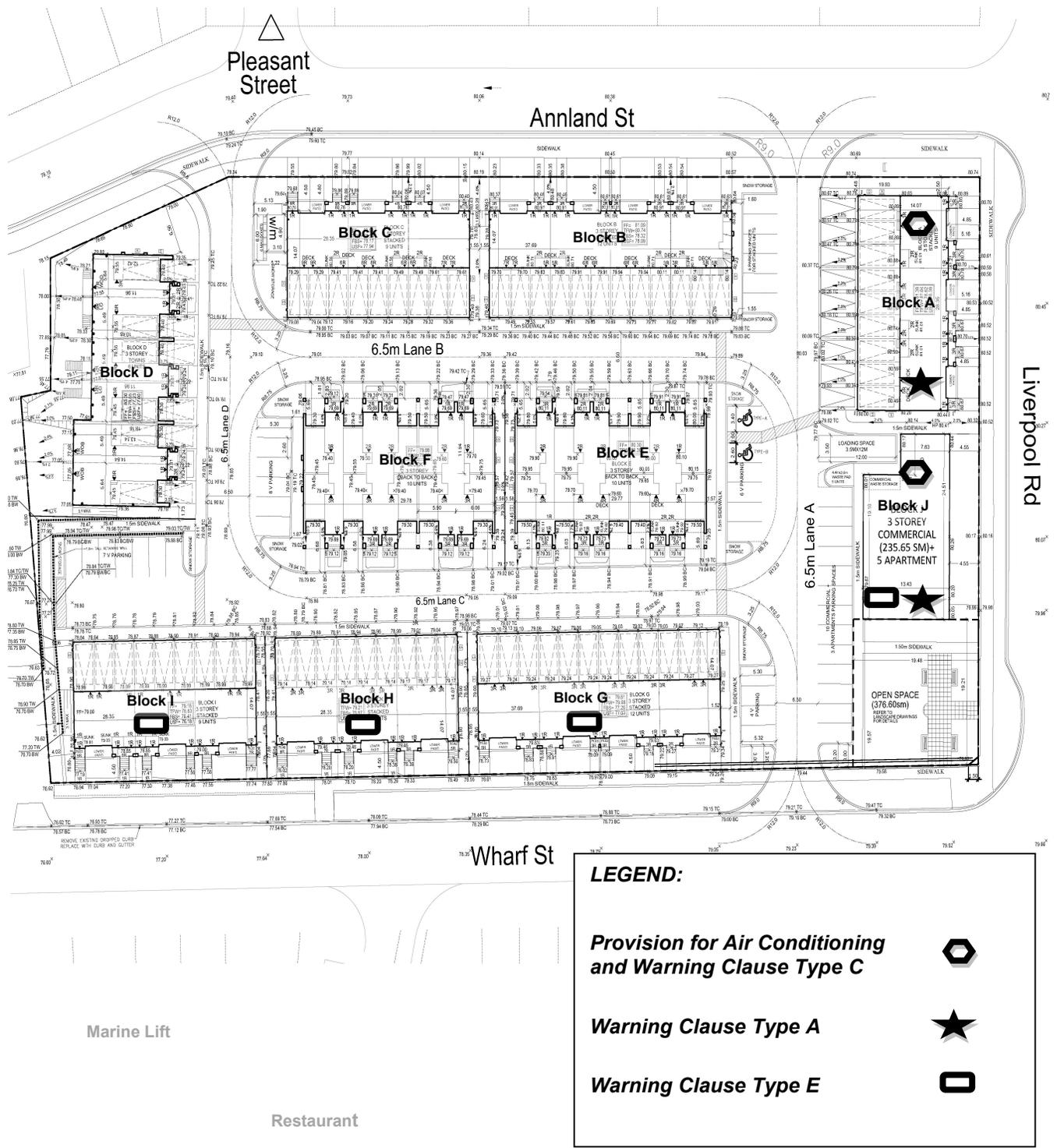
This report has determined that sound levels acceptable to the Ministry of Environment, Conservation and Parks, City of Pickering and the Region of Durham are expected to be achieved using the abatement measures in this report as shown on the attached Figure 2.

Respectfully submitted,

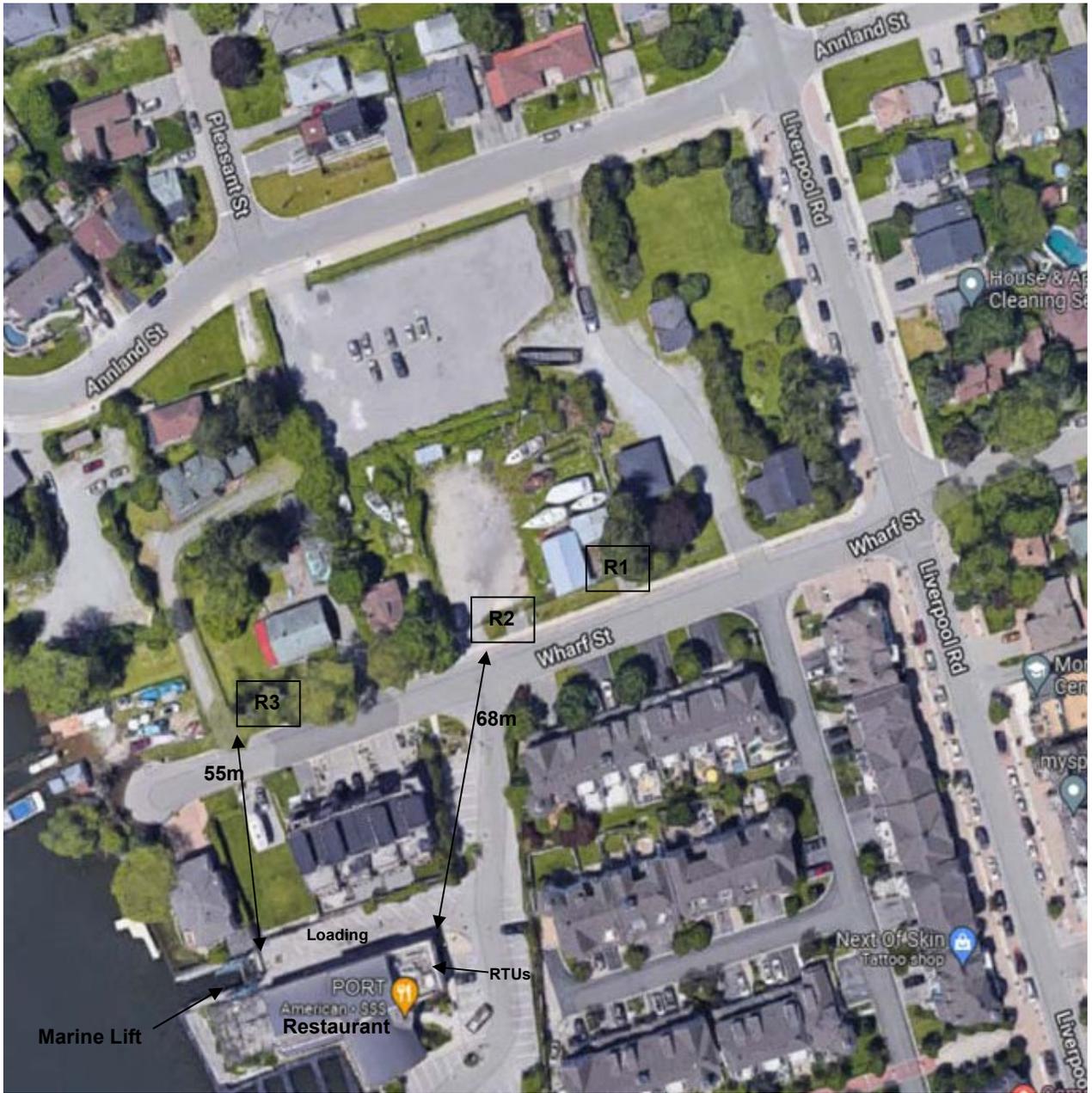
**YCA ENGINEERING Limited**

Hava Jouharchi, P. Eng.  
Senior Project Engineer





**FIGURE 2**  
**640 Liverpool Road**  
**Noise Mitigation Measures**



**FIGURE 3**  
**640 Liverpool Road**  
**Surrounding Stationary Noise Sources**

**APPENDIX 1**  
**TRAFFIC DATA**

# Ontario Traffic Inc.

## Afternoon Peak Diagram

### Specified Period

From: 14:00:00

To: 18:00:00

### One Hour Peak

From: 15:15:00

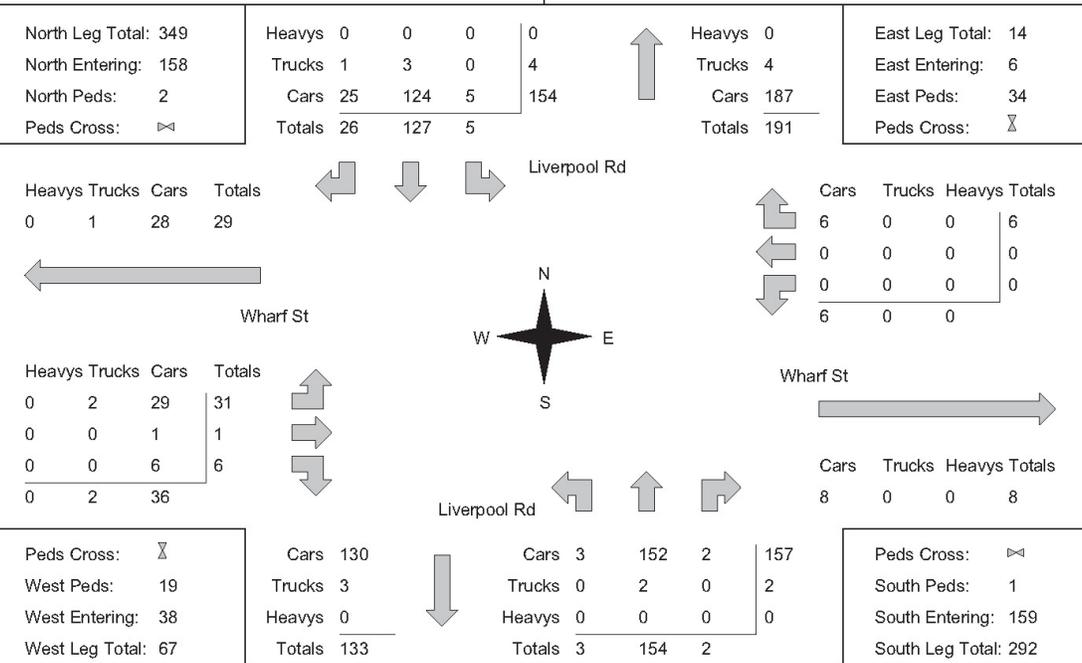
To: 16:15:00

**Municipality:** Pickering  
**Site #:** 1500600007  
**Intersection:** Liverpool Rd & Wharf St  
**TFR File #:** 6  
**Count date:** 28-Apr-15

**Weather conditions:**  
  
**Person(s) who counted:**

**\*\* Non-Signalized Intersection \*\***

**Major Road:** Liverpool Rd runs N/S



### Comments

**APPENDIX 2**

**SOUND LEVEL CALCULATIONS**

STAMSON 5.0 SUMMARY REPORT Date: 22-12-2025 10:08:33  
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT  
 Filename: bk1fw.te Time Period: Day/Night 16/8 hours  
 Description: Block A, Front Wall

Road data, segment # 1: Liverpool Rd (day/night)

-----  
 Car traffic volume : 4769/530 veh/TimePeriod \*  
 Medium truck volume : 99/11 veh/TimePeriod \*  
 Heavy truck volume : 99/11 veh/TimePeriod \*  
 Posted speed limit : 40 km/h  
 Road gradient : 1 %  
 Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 5520  
 Percentage of Annual Growth : 0.00  
 Number of Years of Growth : 0.00  
 Medium Truck % of Total Volume : 2.00  
 Heavy Truck % of Total Volume : 2.00  
 Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Liverpool Rd (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 : 16.00 / 16.00 m  
 Receiver height : 7.50 / 7.50 m  
 Topography : 1 (Flat/gentle slope; no barrier)

Result summary (day)

-----  

	! source !	Road !	Total
	! height !	Leq !	Leq
	! (m) !	(dBA) !	(dBA)
1.Liverpool Rd	! 1.19 !	57.45 !	57.45
Total			57.45 dBA

Result summary (night)

-----  

	! source !	Road !	Total
	! height !	Leq !	Leq
	! (m) !	(dBA) !	(dBA)
1.Liverpool Rd	! 1.18 !	50.92 !	50.92
Total			50.92 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 57.45  
 (NIGHT): 50.92

STAMSON 5.0                    SUMMARY REPORT                    Date: 22-12-2025 10:14:26  
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT  
 Filename: Bklry.te                    Time Period: Day/Night 16/8 hours  
 Description: Block 1, OLA

Road data, segment # 1: Liverpool Rd (day/night)

```
-----
Car traffic volume : 4769/530   veh/TimePeriod  *
Medium truck volume :    99/11   veh/TimePeriod  *
Heavy truck volume  :    99/11   veh/TimePeriod  *
Posted speed limit  :    40 km/h
Road gradient       :     1 %
Road pavement      :     1 (Typical asphalt or concrete)
* Refers to calculated road volumes based on the following input:
  24 hr Traffic Volume (AADT or SADT): 5520
  Percentage of Annual Growth       : 0.00
  Number of Years of Growth         : 0.00
  Medium Truck % of Total Volume    : 2.00
  Heavy Truck % of Total Volume     : 2.00
  Day (16 hrs) % of Total Volume    : 90.00
-----
```

Data for Segment # 1: Liverpool Rd (day/night)

```
-----
Angle  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 : 18.00 m
Receiver height    :    1.50 m
Topography         :     2      (Flat/gentle slope; with barrier)
Barrier angle1     : -90.00 deg  Angle2 : 90.00 deg
Barrier height     :     0.00 m
Barrier receiver distance : 2.00 m
Source elevation   :     0.00 m
Receiver elevation :    10.00 m
Barrier elevation  :    10.00 m
-----
```

Result summary (day)

```
-----
! source ! Road ! Total
! height ! Leq ! Leq
! (m) ! (dBA) ! (dBA)
-----+-----+-----+-----
1.Liverpool Rd ! 1.19 ! 56.25 ! 56.25 *
-----+-----+-----+-----
Total 56.25 dBA
```

\* Bright Zone !

STAMSON 5.0                    SUMMARY REPORT                    Date: 22-12-2025 10:02:39  
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT  
 Filename: bkJola.te                    Time Period: Day/Night 16/8 hours  
 Description: Block J, Roof Top Terrace

Road data, segment # 1: Liverpool Rd (day/night)

```
-----
Car traffic volume : 4769/530   veh/TimePeriod  *
Medium truck volume : 99/11    veh/TimePeriod  *
Heavy truck volume  : 99/11    veh/TimePeriod  *
Posted speed limit  : 40 km/h
Road gradient       : 1 %
Road pavement      : 1 (Typical asphalt or concrete)
* Refers to calculated road volumes based on the following input:
  24 hr Traffic Volume (AADT or SADT): 5520
  Percentage of Annual Growth : 0.00
  Number of Years of Growth   : 0.00
  Medium Truck % of Total Volume : 2.00
  Heavy Truck % of Total Volume  : 2.00
  Day (16 hrs) % of Total Volume : 90.00
-----
```

Data for Segment # 1: Liverpool Rd (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 : 18.00 m
Receiver height : 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg  Angle2 : 90.00 deg
Barrier height : 0.00 m
Barrier receiver distance : 2.00 m
Source elevation : 0.00 m
Receiver elevation : 10.00 m
Barrier elevation : 10.00 m
-----
```

Result summary (day)

```
-----
! source ! Road ! Total
! height ! Leq ! Leq
! (m) ! (dBA) ! (dBA)
-----+-----+-----+-----
1.Liverpool Rd ! 1.19 ! 56.25 ! 56.25 *
-----+-----+-----+-----
Total 56.25 dBA
```

\* Bright Zone !

STAMSON 5.0                    SUMMARY REPORT                    Date: 22-12-2025 10:24:11  
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT  
 Filename: bk3fw.te                    Time Period: Day/Night 16/8 hours  
 Description: Block G, Front Wall

Road data, segment # 1: Liverpool Rd (day/night)

```
-----
Car traffic volume : 4769/530   veh/TimePeriod  *
Medium truck volume :    99/11   veh/TimePeriod  *
Heavy truck volume  :    99/11   veh/TimePeriod  *
Posted speed limit  :    40 km/h
Road gradient       :     1 %
Road pavement      :     1 (Typical asphalt or concrete)
* Refers to calculated road volumes based on the following input:
  24 hr Traffic Volume (AADT or SADT): 5520
  Percentage of Annual Growth       : 0.00
  Number of Years of Growth         : 0.00
  Medium Truck % of Total Volume    : 2.00
  Heavy Truck % of Total Volume     : 2.00
  Day (16 hrs) % of Total Volume    : 90.00
-----
```

Data for Segment # 1: Liverpool Rd (day/night)

```
-----
Angle1  Angle2      : 0.00 deg  90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 42.00 / 42.00 m
Receiver height : 7.50 / 7.50 m
Topography : 1 (Flat/gentle slope; no barrier)
-----
```

Result summary (day)

```
-----
! source ! Road ! Total
! height ! Leq ! Leq
! (m) ! (dBA) ! (dBA)
-----+-----+-----+-----
1.Liverpool Rd ! 1.19 ! 48.20 ! 48.20
-----+-----+-----+-----
Total 48.20 dBA
-----
```

Result summary (night)

```
-----
! source ! Road ! Total
! height ! Leq ! Leq
! (m) ! (dBA) ! (dBA)
-----+-----+-----+-----
1.Liverpool Rd ! 1.18 ! 41.66 ! 41.66
-----+-----+-----+-----
Total 41.66 dBA
-----
```

TOTAL Leq FROM ALL SOURCES (DAY): 48.20  
 (NIGHT): 41.66

**Project No:** Y2240A  
**Project Name:** 640 Liverpool Rd  
**Date:** December 2025

**Receiver Table**

Name	Level Lr		Limit. Value		Height (m)	Coordinates		
	Day	Night	Day	Night		X (m)	Y (m)	Z (m)
	(dBA)	(dBA)	(dBA)	(dBA)				
R1	41.4	38.3	50.0	45.0	7.50	450.24	394.03	7.50
R2	40.8	37.8	50.0	45.0	7.50	429.08	386.00	7.50
R3	43.8	36.6	50.0	45.0	7.50	378.16	367.08	7.50

**Point Source Table**

Name	Result. PWL			Lw / Li		Operating Time			Freq. (Hz)	Height		Coordinates		
	Day	Evening	Night	Type	Value	Day	Special	Night		(m)	g	X (m)	Y (m)	Z (m)
	(dBA)	(dBA)	(dBA)			(min)	(min)	(min)						
S1	87.4	87.4	87.4	Lw	Carrier1	720.00	240.00	240.00		1.00	g	411.95	310.25	7.00
S2	87.7	87.7	87.7	Lw	Carrier2	720.00	240.00	240.00		1.00	g	416.10	311.28	7.00
S3	79.0	79.0	79.0	Lw	Carrier3	720.00	240.00	240.00		1.00	g	413.51	306.59	7.00
S4	88.9	88.9	88.9	Lw	Carnes1	720.00	240.00	240.00		1.00	g	417.75	307.15	7.00
S5	82.2	82.2	82.2	Lw	Tecumseth	720.00	240.00	240.00		1.00	g	413.73	303.42	7.00
S6	85.6	85.6	85.6	Lw	EnMar	720.00	240.00	240.00		1.20	g	418.40	305.17	7.20
S7	87.4	87.4	87.4	Lw	Carrier1	720.00	240.00	240.00		1.20	g	420.32	305.72	7.20
Spkr	95.0	95.0	95.0	Lw	Spkr	420.00	240.00	60.00		2.00	r	381.05	298.01	2.00
MarinLift	85.0	85.0	85.0	Lw	Lift	180.00	60.00	0.00		2.50	r	381.44	311.42	2.50
Loading	91.1	91.1	91.1	Lw	Loading	60.00	30.00	0.00		2.50	r	387.41	313.26	2.50

**Partial Level**

Source			Partial Level Day		
Name	M.	ID	R1	R2	R3
S1		S1	36.0	33.3	29.8
S2		S2	32.3	33.9	30.5
S3		S3	24.9	24.8	20.5
S4		S4	34.7	34.4	29.4
S5		S5	28.2	28.6	25.4
S6		S6	31.7	31.3	26.3
S7		S7	34.1	33.7	25.8
Spkr		Spkr	15.4	17.6	40.6
MarinLift		MarinLift	11.1	12.1	35.3
Loading		Loading	13.6	13.3	36.7

**Result Table**

Receiver Name	Limiting Value		Lr w/o Noise Control		dL req.		Lr w/ Noise Control		Exceeding	
	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night
	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
R1	50	45	41.4	38.3	-	-	0.0	0.0	-	-
R2	50	45	40.8	37.8	-	-	0.0	0.0	-	-
R3	50	45	43.8	36.6	-	-	0.0	0.0	-	-

**APPENDIX 3**

**SOUND LEVEL CRITERIA**

# MINISTRY OF THE ENVIRONMENT, CONSERVATION AND PARKS

## ENVIRONMENTAL NOISE GUIDELINE Stationary and Transportation Sources - Approval and Planning Publication NPC-300

August 2013

### Day-time Outdoor Sound Level Limit

Table C-1 gives the equivalent sound level ( $L_{eq}$ ) limit for designated Outdoor Living Areas. The limit applies to the entire day-time period from 07:00 to 23:00.

**TABLE C-1**  
**Sound Level Limit for Outdoor Living Areas**  
**Road and Rail**

Time Period	$L_{eq}(16)$ (dBA)
16 hr, 07:00 - 23:00	55

### Indoor Sound Level Limit

Table C-2 gives the equivalent sound level ( $L_{eq}$ ) limits and the applicable time periods for the indicated types of indoor space. The specified sound level criteria are minimum requirements and apply to the indicated indoor spaces with the windows and doors closed.

**TABLE C-2**  
**Indoor Sound Level Limits (Road and Rail)**

Type of Space	Time Period	$L_{eq}$ (Time Period) (dBA)	
		Road	Rail
Living/dining, den areas of residences, nursing/retirement homes, hospitals, schools, day-care centers, etc.	07:00-23:00	45	40
Living/dining areas of residences, nursing/retirement homes, hospitals, etc. (except schools or daycare centres)	23:00 - 07:00	45	40
Sleeping quarters	07:00-23:00	45	40
Sleeping quarters	23:00 - 07:00	40	35

## SUPPLEMENTARY NOISE LIMITS

Indoor limits for transportation sources applicable to noise sensitive land uses are specified in Table C-2 and Table C-9.

**TABLE C-9**  
**Indoor Sound Level Limits (Road and Rail)**

Type of Space	Time Period	L <sub>eq</sub> (Time Period) (dBA)	
		Road	Rail
General offices, reception areas, retail stores, etc.	16 hours between 07:00-23:00	50	45
Living/dining areas of residences, hospitals, schools, nursing/retirement, homes day-care centers, theatres, place of worship, libraries, individual or semi-private offices, conference rooms, reading rooms etc.	16 hours between 07:00-23:00	45	40
Sleeping quarters of hotels/motels	8 hours between 23:00 - 07:00	45	40
Sleeping quarters of residences, hospitals, nursing/retirement homes etc	8 hours between 23:00 - 07:00	40	35

## SUMMARY OF MINIMUM NOISE CONTROL AND VENTILATION REQUIREMENTS FOR ROAD AND RAIL NOISE

**TABLE 1**  
**COMBINATION OF ROAD AND RAIL NOISE, DAY-TIME (0700 - 2300)**  
**OUTDOOR, VENTILATION AND WARNING CLAUSE REQUIREMENTS**

ASSESSMENT LOCATION	L <sub>eq</sub> (16 hr) (dBA)	VENTILATION REQUIREMENTS	OUTDOOR CONTROL MEASURES	WARNING CLAUSE
OUTDOOR LIVING AREA (OLA)	Less than or equal to 55 dBA	N/A	None required	Not required
	Greater than 55 dBA to less than or equal to 60 dBA	N/A	Control measures (barriers) not required but should be considered	Required if resultant L <sub>eq</sub> exceeds 55 dBA Type A
	Greater than 60 dBA	N/A	Control measures (barriers) required to reduce the L <sub>eq</sub> below 60 dBA and as close to 55 dBA as technically, economically and administratively feasible	Required if resultant L <sub>eq</sub> exceeds 55 dBA Type B
PLANE OF LIVING ROOM WINDOW	Greater than 50 dBA to less than or equal to 55 dBA	None required	N/A	Not required
	Greater than 55 dBA to less than or equal to 65 dBA	Forced air heating with provision for central air conditioning	N/A	Required Type C
	Greater than 65 dBA	Central air conditioning	N/A	Required Type D

**TABLE 2**  
**COMBINATION OF ROAD AND RAIL NOISE, NIGHT-TIME (2300 - 0700)**  
**VENTILATION AND WARNING CLAUSE REQUIREMENTS**

ASSESSMENT LOCATION	L <sub>eq</sub> (8hr) (dBA)	VENTILATION REQUIREMENTS	WARNING CLAUSE
PLANE OF BEDROOM WINDOW	Greater than 50 dBA to less or equal to 60 dBA	Forced air heating with provision for central air conditioning	Required Type C
	Greater than 60 dBA	Central air conditioning	Required Type D

**TABLE 3  
ROAD AND RAIL NOISE, DAY-TIME (0700 - 2300)  
BUILDING COMPONENT REQUIREMENTS**

ASSESSMENT LOCATION		$L_{eq}$ (16 hr)	BUILDING COMPONENT REQUIREMENTS
PLANE OF LIVING ROOM WINDOW	ROAD	Less than or equal to 65 dBA	Building compliant with the Ontario Building Code
		Greater than 65 dBA	Building components (walls, windows, etc.) must be designed to achieve indoor sound level criteria
	RAIL	Less than or equal to 60 dBA	Building compliant with the Ontario Building Code
		Greater than 60 dBA	Building components (walls, windows, etc.) must be designed to achieve indoor sound level criteria

**TABLE 4  
ROAD AND RAIL NOISE, NIGHT-TIME (2300-0700)  
BUILDING COMPONENT REQUIREMENTS**

ASSESSMENT LOCATION		$L_{eq}$ (8 hr)	BUILDING COMPONENT REQUIREMENTS
PLANE OF BEDROOM WINDOW	ROAD	Less than or equal to 60 dBA	Building compliant with the Ontario Building Code
		Greater than 65 dBA	Building components (walls, windows, etc.) must be designed to achieve indoor sound level criteria
	RAIL	Less than or equal to 60 dBA	Building compliant with the Ontario Building Code
		Greater than 60 dBA	Building components (walls, windows, etc.) must be designed to achieve indoor sound level criteria

**TABLE 5  
FACADE REQUIREMENT FOR RAIL NOISE ONLY - 24 HOURS**

ASSESSMENT LOCATION	DISTANCE TO RAILWAY (m)	$L_{eq}$ (24 hr) (dBA)	NOISE CONTROL REQUIREMENT
PLANE OF BEDROOM WINDOW	Less than 100 m	Less than or equal to 60 dBA	No additional requirement
		Greater than 60 dBA	Brick veneer or acoustically equivalent
	Greater than 100 m	Less than or equal to 60 dBA	No additional requirement
		Greater than 60 dBA	No additional requirement

**TABLE B- 1  
Exclusion Limit Values of One-Hour Equivalent Sound Level (Leq dBA)  
Outdoor Points of Reception**

Time of Day	Class 1 Area	Class 2 Area	Class 3 Area	Class 4 Area
07:00-19:00	50	50	45	55
19:00 -23:00	50	45	40	55

**TABLE B- 2  
Exclusion Limit Values of One-Hour Equivalent Sound Level (Leq dBA)  
Plane of Window of Noise Sensitive Spaces**

Time of Day	Class 1 Area	Class 2 Area	Class 3 Area	Class 4 Area
07:00-19:00	50	50	45	60
19:00 -23:00	50	50	40	60
23:00-07:00	45	45	40	55

## **WARNING CLAUSES**

*The following warning clauses may be used individually or in combination:*

### **TYPE A:**

*"Occupants are advised that sound levels due to increasing road traffic may occasionally interfere with some activities of the dwelling occupants and the outdoor sound level may exceed the Municipality and the Ministry of Environment's noise criteria."*

### **TYPE C:**

*"This unit has been fitted with a forced air heating system and the ducting, etc. was sized to accommodate central air conditioning. Installation of central air conditioning by the occupant will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the Municipality's and the Ministry of the Environment's noise criteria. (Note: The location and installation of the outdoor air conditioning device should be done so as to comply with noise criteria of MOE Publication NPC-216, Residential Air Conditioning Devices and thus minimize the noise impacts both on and in the immediate vicinity of the subject property.)"*

### **TYPE E:**

*"Occupants are advised that due to the proximity of the existing Restaurant, Marine Travel Lift and the proposed commercial activities from Block J, noise from the Restaurant, Marine Travel Lift and the proposed commercial activities may at times be audible."*

## **APPENDIX 4**

# **SAMPLE WINDOW AND EXTERIOR WALL CONFIGURATIONS**

## WINDOW STC RATINGS

STC	Double Glazing of indicated glass thickness					Triple Glazing	
	2mm and 2mm glass	3mm and 3mm glass	4mm and 4mm glass	3mm and 6mm glass	6mm and 6mm glass	3mm 3mm and 3mm glass	3mm 3mm and 6mm glass
	Interpane Spacing (mm)					Interpane Spacing (mm)	
27	6						
28	13						
29	15	6					
30	18	13	6				
31	22	16	13	6	6	6,6	
32	28	20	16	13	13	6,10	6,6
33	35	25	20	16	16	6,15	6,10
34	42	32	25	20	20	6,20	6,15
35	50	40	32	25	24	6,30	6,20
36	63	50	40	32	30	6,40	6,30
37	80	63	50	40	37	6,50	6,40
38	100	80	63	55	50	6,65	6,50
39	125	100	80	75	70	6,80	6,65
40	150	125	100	95	90	6,100	6,80
41		150	125	110	100		6,100
42			150	135	125		

Source: National Research Council, Division of Building Research

### EXPLANATORY NOTES:

1. STC data listed in the table are for the well-fitted weather-stripped units that can be opened. The STC values apply only when the windows are closed. For windows fixed and sealed to the frame, add three to the STC given in the table.
2. If the interpane spacing or glass thickness for a specific double-glazed window is not listed in the table, the nearest listed values should be used.
3. If the interpane spacing for a specific triple-glazed window are not listed in the table, use the listed case whose combined spacing are nearest the actual combined spacing.
4. The STC data listed in the table are for typical windows, but details of glass mounting, window seals, etc., may result in slightly different performance for some manufacturer's products. If the laboratory sound transmission loss data (conforming to ASTM test method E-90) are available, these should be used.

## EXTERIOR WALL STC RATINGS

Wall Configuration	EW1	EW2	EW3	EW4	EW1R	EW2R	EW3R	EW5	EW4R	EW6	EW7 EW5R	EW8
<b>STC Rating</b>	<b>38</b>	<b>40</b>	<b>43</b>	<b>46</b>	<b>47</b>	<b>48</b>	<b>49</b>	<b>54</b>	<b>55</b>	<b>57</b>	<b>58</b>	<b>62</b>

Source: National Research Council, Division of Building Research

### NOTES:

- 1 The common structure of walls EW1 to EW5 is composed of 12.7mm gypsum board, vapour barrier and 38x89 mm studs with 50 mm (or thicker) mineral wool or glass fibre batts in inter-stud cavities.
  - EW1 denotes the common structure, plus sheathing, plus wood siding or metal siding and fibre backer board
  - EW2 denotes the common structure, plus rigid insulation (25 to 30 mm), and wood siding or metal siding and fibre backer board.
  - EW3 denotes simulated mansard with the common structure, plus sheathing, 28 X89 mm framing, sheathing and asphalt roofing material
  - EW4 denotes the common structure, plus sheathing and 20 mm stucco.
  - EW5 denotes the common structure, plus sheathing, 25 mm air space, 100mm brick veneer.
  - EW6 denotes exterior wall composed of 12.7 mm gypsum board, rigid insulation (25 to 50 mm), 100 mm back-up block 100 mm face brick.
  - EW7 denotes exterior wall composed of 12.7 mm gypsum board, rigid insulation (25 to 50 mm), 140mm back-up block, 100 mm face brick.
  - EW8 denotes exterior wall composed of 12.7 mm gypsum board, rigid insulation (25 to 50 mm), 200 mm concrete.
  
- 2 R signifies the mounting of the interior gypsum board on resilient clips.
  
- 3 An exterior wall conforming to rainscreen design principles and composed of 12.7 mm gypsum board, 100 mm concrete block, rigid insulation (25 to 50 mm), 25 mm air space, and 100 mm brick veneer has the same STC as EW6.
  
- 4 An exterior wall described in EW1 with the addition of rigid insulation (25 to 50 mm) between the sheathing and the external finish has the same STC as EW2.