yongeTOmorrow Environmental Study Report
July 2021

Appendix – yongeTOmorrow Environmental Noise Assessment

City of Toronto

Environmental Noise Assessment – Yonge Street from Queen Street to Carlton/College Street

City of Toronto

SLR Project No: 241.16362.A0000

July 2021

Environmental Noise Assessment – Yonge Street

From Queen Street to Carlton/College Street

SLR Project No: 241.16362.00000

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EXECUTIVE SUMMARY

Novus Environmental Inc. (Novus), now a part of SLR Consulting (Canada) Ltd., was retained by Steer Davies Gleave on behalf of the City of Toronto to conduct an environmental transportation noise impact assessment in Toronto, Ontario. The purpose of the assessment is to address the proposed Yonge Street roadway improvements from Queen Street to Carlton/College Street. This work is being done as part of the Municipal Class Environmental Assessment process. This encompasses approximately 1 km of improved roadway.

The objectives of this study are as follows:

- To assess future "build" and "no-build" sound levels from road traffic noise sources in the area (i.e., noise levels with and without the proposed project taking place).
- To use these predictions to assess potential impacts according to the applicable guidelines.
- To specify mitigation measures where required.
- To assess the potential for construction noise and provide a Code of Practice to minimize potential impacts.

The potential environmental transportation noise impacts of the proposed undertaking have been assessed. Both operational and construction noise impacts have been considered. The conclusions and recommendations are as follows:

- The results show that changes in sound levels resulting from the proposed project are expected to be negligible.
- Noise impacts are extremely minor and well less than the 5 dBA impact criteria in the Noise Protocol. No additional noise mitigation is recommended.
- Construction noise impacts are temporary in nature but may be noticeable at times in nearby residential NSAs. Methods to minimize construction noise impacts should be included in the Construction Code of Practice, as outlined in Section 3.3.

1.0 INTRODUCTION

Novus Environmental Inc. (Novus) now a part of SLR Consulting (Canada) Ltd., was retained by Steer Davies Gleave on behalf of the City of Toronto to conduct an environmental transportation noise impact assessment in Toronto, Ontario. The purpose of the study is to address the proposed Yonge Street roadway improvements from Queen Street to Carlton/College Street. This work is being done as part of the Municipal Class Environmental Assessment process. This encompasses approximately 1 km of improved roadway.

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- To use these predictions to assess potential impacts according to the applicable guidelines.
- To specify mitigation measures where required.
- To assess the potential for construction noise and provide a Code of Practice to minimize potential impacts.

A glossary of transportation sound basics can be found in Appendix A.

1.1 Project Description

Improve the right-of way including sidewalk and cycling facilities, streetscape and natural features, transit stops, intersections and all other road infrastructure features in accordance with the City and other applicable standards.

A context plan and an overview of the study area for the project is shown in Figure 1. Plates showing the technically preferred alternative are found in Appendix B.

2.0 ROAD TRAFFIC NOISE IMPACTS (OPERATIONAL NOISE)

For roadway projects, operational noise is of primary importance. This section of the report provides an analysis of operational noise impacts from road traffic noise related to this undertaking.

2.1 Applicable Guidelines

The Ontario provincial policies and guidelines from the Ministry of Transportation, Ontario (MTO) and the Ministry of the Environment, Conservation and Parks, Ontario (MECP) are directly applicable under the Municipal Class EA process for transportation projects such as this one and they are discussed in detail in this report.

2.1.1 Ontario Provincial Guidelines and Policies

Ontario has several guidelines and documents related to assessing road traffic noise impacts. The document most applicable to municipal roadway projects is:

- Ontario MECP/MTO, "Joint Protocol", A Protocol for Dealing with Noise concerns during the Preparation, Review and Evaluation of Provincial Highway's Environmental Assessments (MTO & MECP, 1986)

In May 2007, the MTO released the *Environmental Guide for Noise* (MTO, 2006) which superseded the Joint Protocol and previous MTO *Quality and Standards Directive QST-A1 Noise Policy and Acoustic Standards for Provincial Highways* (MTO 1992). Currently the *Environmental Guide for Noise* (the Guide) has not been adopted by the MECP for municipal projects. Therefore, the Joint Protocol has been used for this study. A summary of the effort required under the Joint Protocol is shown in Table 1.

Table 1: Summary of Mitigation Efforts Under the MECP/MTO Joint Protocol

Future Sound Levels	Change in Noise Level Above Future "No-Build" Ambient	Mitigation Effort
< 55 dBA	0 to 5 dBA	None
	> 5 dBA	
> 55 dBA	0 to 5 dBA	None
	> 5 dBA	• Investigate noise control measures on right-of-way. • If project cost is not significantly affected introduce noise control measure within right-of-way. • Noise control measures, where introduced, should achieve a minimum of 5 dBA attenuation averaged over first row receivers. • Mitigated to ambient, as administratively, economically, and technically feasible.

Notes: Values are L_{eq} (16h) levels for municipal roads.

The Joint Protocol sets out an Outdoor Objective sound level of the higher of 55 dBA L_{eq}, or the existing ambient. For sound levels less than 65 dBA either the Guide or the Joint Protocol assesses noise impacts in a similar manner. Only in the case where sound levels exceed 65 dBA is the Guide more stringent. The evaluation of noise impacts is determined by the change in cumulative sound levels from the 2041 "no-

build" scenario to the future "build" scenario. Assessments are based on a minimum 10-year future horizon year (i.e., traffic volumes 10 years after the completion of the project). Accordingly, a design year of 2041 applies to this project, corresponding to the traffic forecasts provided by Steer Davies Gleave.

Noise mitigation is warranted when increases in sound level over the "no-build" ambient are greater than 5 dBA. Mitigation measures can include changes in vertical profiles and horizontal alignments and noise barriers. Noise mitigation, where applied, must be administratively, economically, and technically feasible, and must provide at least 5 dBA of reduction averaged over the first row of noise-sensitive receivers. Mitigation measures are restricted to within the roadway right-of-way. Off right-of-way noise mitigation, such as window upgrades and air conditioning, is not considered.

2.2 Location of Noise Sensitive Areas Within the Study Area

2.2.1 Definition of Outdoor Living Area (OLA) and Noise Sensitive Areas (NSAs)

Noise impacts from transportation projects are evaluated at noise sensitive receptors commonly referred to as NSAs. The OLA is the part of an outdoor amenity area provided for the quiet enjoyment of the outdoor environment. The OLA is typically an area at ground level accommodating outdoor living activities. For sound level calculation purposes, the usual distance from the dwelling unit wall is 3 m where the actual OLA location is not known. The vertical height is 1.5 metres (approximate head-height) above ground level. Where unknown, the side closest to the source of noise is assumed. Paved areas for multiple dwelling residential units are not defined as OLA. The OLA may include private areas used by individual dwelling occupants or "common" areas used by multi-tenant dwelling occupants.

Under the Joint Protocol, NSAs include the following land uses, provided they have an OLA associated with them:

- Private homes (single family units and townhouses)
- Multiple unit buildings such as apartments, provided they have a communal OLA associated with them
- Hospitals and nursing homes for the aged, provided they have an OLA for use by patients
- Schools, educational facilities, and daycare centres where there are OLAs for students
- Campgrounds that provide overnight accommodation
- Hotels and motels with outdoor communal OLAs for visitors
- Churches and places of worship

The following land uses are generally not considered to qualify as NSAs:

- Apartment balconies
- Cemeteries
- Parks and picnic areas not part of a defined OLA
- All commercial
- All industrial

2.2.2 Representative NSAs for Analysis

Ten (10) NSAs have been used in the analysis to represent worst-case potential noise impacts at all nearby noise sensitive land uses within the study area. NSAs were chosen to assess areas with similar

overall noise levels and similar changes in noise ("build" versus "no-build"). These NSAs and modelled receptor locations are described in **Table 2**. There are very few NSA's as defined in Section 2.1.1. In the absence of these types of NSA's, areas such as Yonge Dundas Square were chosen as there are often public activities in these areas that may be adversely affected by high roadway noise levels. The locations of the representative noise receptors used in the analysis are shown in **Figure 2** to **Figure 9**.

Table 2: Representative NSAs Considered in Analysis

Receptor Location	Description
Receptor 1	Southwest corner of Dundas Square
Receptor 2	Between Receptors 1 and 3
Receptor 3	Northwest Corner of Dundas Square
Receptor 4	Approximate Centre of Dundas Square
Receptor 5	Park at West end of McGill Street
Receptor 6	1 Granby Street
Receptor 7	86 McGill Street
Receptor 8	Green Space on East Side of Church Street North of Gould Street
Receptor 9	Northeast Corner of Bay Street and Queen Street West
Receptor 10	Southeast Corner of Bay Street and College Street

2.3 Study Horizons

Under the Noise Protocol a "noise impact" is defined as the difference in projected noise levels at the "no build" and the projected noise levels at the "build" design year. Traffic volumes from the year 2041 were the best available at the time of this assessment to assess possible noise impacts.

2.4 Study Scenarios

As mentioned above, the "noise impact" for the study area is defined as the difference in projected noise levels between the "no build" and "build" scenarios.

2.5 Road Traffic Data

Traffic volumes for the 2041 "no build" and 2041 "build" scenarios for multiple roadways were provided by Steer Davies Gleave and are found in **Appendix C**. Traffic data was provided as peak hour volumes that were converted to Average Annual Daily Traffic (AADT), with percentage of commerical vehicles, day/night traffic split and the speeds used in the noise analysis. These traffic volumes and associated data are at least 10 years in the future as required in the Noise Protocol.

2.6 Noise Model Used

The roadway noise prediction model used is the ORNAMENT road noise prediction algorithms produced by the MECP. The MECP "STAMSON" highway noise prediction model is a computerized version of this method. Both methods are simplified versions of the United States Federal Highway Administration Method. A Cadna/A implementation of the STAMSON/ ORNAMENT model was used for the noise analysis because of its ability of handle complex ground elevations, multiple barriers, buildings, and receptors. The Cadna/A software also considers screening from buildings that are located between the roadways and the NSAs. For calibration and comparison purposes Receptor 4 was modeled in STAMSON without the shielding of the building. The sound power levels, and noise source heights used in Cadna/A are found in Appendix D.

The noise prediction model relies on the use of vehicle noise emission levels to generate a noise source that can then be assessed at the receptors based on the following factors:

- speeds for the roadways in the area used in the noise analysis;
- pavement surface used for construction of the roadway (hot mix asphaltic pavement for all roadways);
- elevations, contours and locations of all the NSA's near the right-of-way;
- roadway grades;
- intervening rows of homes and barriers;
- type of ground cover, soft or hard ground;
- percentage of commercial traffic; and,
- distance from the roadway.

The model uses the following vehicle classifications:

Automobiles -	Two axles and four wheels designed primarily for the transportation of nine or fewer passengers, or transportation of cargo (light trucks). This classification includes motorcycles. Generally, the gross vehicle weight is less than 4,500 kilograms.
Medium trucks -	Two axles and six wheels designed for the transportation of cargo. Generally, the gross vehicle weight is greater than 4,500 kilograms but less than 12,000 kilograms.
Heavy trucks -	Three or more axles and designed for the transportation of cargo. Generally, the gross vehicle weight is greater than 12,000 kilograms.

Distances, roadway heights, and receptor locations were obtained from plan drawings supplied by Steer Davies Gleave in addition to aerial photography.

2.7 Detailed Modelling

Table 3 presents a comparison of predicted "no build" versus future "build" sound levels at receptors in the study area during the 16-hour daytime period.

Table 3: 2041 "No-Build" and "Build" Noise Levels

Receptor Location	"No Build" L_{eq} (16h)	"Build" L_{eq} (16h)	Change ("Build" minus "No Build")	Increase Above 5 dBA
Receptor 1	58.1	48.6	-9.5	No
Receptor 2	58.5	51.7	-6.8	No
Receptor 3	60.7	58.4	-2.3	No
Receptor 4	50.2	45.6	-4.6	No
Receptor 5	40.9	33.2	-7.7	No
Receptor 6	41.5	35.2	-6.3	No
Receptor 7	50.6	50.6	0.0	No
Receptor 8	56.4	57.0	0.6	No
Receptor 9	58.7	58.8	0.1	No
Receptor 10	58.7	58.6	-0.1	No

2.8 Discussion of Noise Impacts

Under the policy and guidelines from the MECP only noise from roadway traffic assessed. The ambient noise from other noise sources along this corridor are expected to be considerably higher than this, due to noise generated by mechanical and/or HVAC units in all the commercial buildings. Due to the presence of large commercial buildings along all the surrounding streets, road noise decreases considerably at the rear of the buildings due to there size. Road noise is not the dominant noise source unless the receptor is located next to a major roadway.

The sound levels were assessed for the 16-hour day period between 07:00 am and 11:00 pm. The currently approved noise prediction models approved for use in Ontario do not allow for the prediction of roadway speeds less than 50 km/h. Some of the roadways within the study area have posted speeds less than 50 km/h and were raised to 50 km/h with is a very conservative assessment for this study.

2.8.1 "Do-Nothing" Alternative Discussion

At Receptors 1 to 3 (**Figure 2**) sound levels are approximately 60 dBA because of the proximity of the nearby roadways. At Receptor 4 (**Figure 2**), located further from Yonge Street and Dundas Street, the sound level is approximately 50 dBA. Sound levels at Receptors 5 and 6 (**Figure 3**) are approximately 41 to 42 dBA.

At the east end of McGill Street, west of Church Street at Receptor 7 (**Figure 4**), the sound level is approximately 50 dBA. The sound level is approximately 56 dBA at Receptor 8 (**Figure 5**). For Receptor 9 (**Figure 6**), located at the southeast corner of Bay and College Streets, and Receptor 10 (**Figure 7**) at the northwest corner of Bay Street and Queen Street West, the sound levels are approximately 59 dBA.

2.8.2 "Technically Preferred" Alternative Discussion

At Receptors 1 to 3 (**Figure 2**) sound levels are approximately 50 to 60 dBA depending upon the proximity of the nearby roadways. At Receptor 4 (**Figure 2**) the sound level is approximately 45 dBA. Sound levels

at Receptors 5 and 6 (**Figure 3**) are approximately 35 dBA. At Receptor 7 (**Figure 4**), the sound level is approximately 50 dBA. The sound levels were predicted to be approximately 56 dBA at Receptor 8 (**Figure 5**). For Receptor 9 (**Figure 6**) and Receptor 10 **(Figure 7)** the predicted sound levels at both locations was approximately 59 dBA.

2.8.3 Noise Impact Discussion

All receptors in the vicinity of Yonge Street experience noise level reductions with the construction of the technically preferred alternative. The amount of reduction depends upon whether the section of Yonge Street in the vicinity of the receptor is closing or will have reduced traffic volumes. Another factor is the distance to east-west roadways which will continue of have high traffic volumes.

Sound levels in the vicinity of Bay Street and Church Street, which would be expected to receive additional traffic because of changes to Yonge Street, are expected to remain largely unchanged. It takes approximately a 3 dBA change[1] in sound levels before most persons perceive a change, therefore the slight increases in sound levels are expected to be imperceptible to the public. We understand traffic levels on these roads are already close to and/or at their maximum capacity both with and without the undertaking.

2.9 Discussion and Investigation of Noise Mitigation

There was no quantitative examination of noise barriers to mitigate any changes in noise levels. The noise impacts are negligible and well less than the 5 dBA impact criteria in the Noise Protocol. As a result, noise mitigation is not recommended for this project.

[1] See **Appendix A**, Human Perception of Sound, for additional information on changes in sound levels.

3.0 CONSTRUCTION NOISE IMPACTS

Construction noise impacts are temporary in nature, and largely unavoidable. Although for some periods and types of work, construction noise may be noticeable, with adequate controls these impacts can be minimized. This section of the report provides overview of the bylaw and recommends a Code of Practice to minimize impacts.

3.1 Construction Noise and Vibration Assessment Guidelines

3.1.1 MECP Model Municipal Noise Control Bylaw

The MECP stipulates limits on noise emissions from individual items of equipment, rather than for overall construction noise. In the presence of persistent noise complaints, sound emission standards for the various types of construction equipment used on the project should be checked to ensure that they meet the specified limits contained within MECP Publication NPC-115 – "Construction Equipment". These limits are provided in Table 4.

Table 4: NPC-115 Maximum Noise Emission Levels for Typical Construction Equipment

Type of Unit	Maximum Sound Level [1] (dBA)	Distance (m)	Power Rating (kW)
Excavation Equipment [2]	83	15	< 75
	85	15	> 75
Pneumatic Equipment [3]	85	7	-
Portable Compressors	76	7	-

Notes: [1] Maximum permissible sound levels presented here are for equipment manufactured after January 1, 1981.
[2] Excavation equipment includes bulldozers, backhoes, front end loaders, graders, excavators, steam rollers and other equipment capable of being used for similar applications.
[3] Pneumatic equipment includes pavement breakers.

3.1.2 Construction Vibration Guidelines

Blasting is not expected to occur as part of this project's construction processes. Regardless, vibration from construction activities can affect surrounding structures. The vibration limits recommended under Ontario Provincial Standard Specification (OPSS) OPSS MUNI-120 – *General Specification for the Use of Explosives* should be adopted (OPSS 2014). These vibration limits are summarized in Table 5.

Table 5: Construction Vibration Limits – OPSS MUNI-120

Element	Frequency	Limit – Peak Particle Velocity (PPV), mm/s
Structures and Pipelines	< 40 Hz	20
	> 40 Hz	50
Concrete and Grout < 72 hours from placement	All	10

These limits would apply to vibration from construction activities such as hoe ramming, pile driving, dumping and excavation. The contractor should assess the potential for vibration impacts from their planned activities prior to the start of construction and mitigate accordingly.

In addition, the contractor should abide by the following MECP vibration document requirements when constructing this undertaking:

- Noise Pollution Control Publication 207 (NPC-207), *Impulse Vibration in Residential Buildings,* (November 1983); and,
- Vibration limits within MECP publication NPC-207 can be supplemented by more detailed construction vibration limits regarding building damage from Chapter 12 of *United States Federal Transit Administration - Transit Noise and Vibration Impact Assessment* (document FTA-VA-90-1003-06 – May 2006).

Where there are overlapping criteria, the more stringent criteria apply. Excerpts from NPC-207 are presented in Tables 6 and 7. Full details of the construction vibration limits are provided in their respective documents.

The scope of NPC-207 is defined as follows:

> *The purpose of this Publication is to provide a method for assessment of impulse vibration measured inside occupied residential buildings, caused by the operation of stationary sources of vibration including, but not limited to, stamping presses and forging hammers.*

NPC-207 was drafted to address permanent, rather than temporary, vibration impacts and address perceived vibrations rather than the building damage criteria that are set out in OPSS MUNI-120.

Table 6: Table 207-2: Vibration Limits for Frequent Impulses

(20 or More Impulses in Reported Observation Period)

Observation Period in Minutes	Limit on the Average Peak Vibration Velocity in mm/s	
	Day-Time 07:00 – 23:00	Night-Time 23:00 – 07:00
20 minutes or less	0.30	0.30
Less or equal to 60 minutes but more than 20 minutes	0.60	0.30
Less or equal to 120 minutes but more than 60 minutes	1.00	0.30

Notes: Source: NPC-207 – Full details for vibration limits provided in NPC-207

Table 7: Table 207-3: Vibration Limits for Infrequent Impulses

(Less than 20 Impulses in Reported Observation Period)

Observation Period in Minutes	Limit on the Average Peak Vibration Velocity of Individual Impulses in mm/s	
	Day-Time 07:00 – 23:00	Night-Time 23:00 – 07:00
120 minutes	10.00	0.30

Notes: Source: NPC-207 – Full details for vibration limits provided in NPC-207

3.1.3 Local Noise Control Bylaw

The proposed project lies entirely within the City of Toronto which has a bylaw restricting noise from construction activities. The City is exempt from the need to secure an exemption to the bylaw if there is a requirement to work at times not allowed in Article 2 of the bylaw. Table 8 clearly exempts the city from following the requirements of the bylaw during the construction phase of this undertaking. A consolidated copy of the bylaw can be found in Appendix E.

Table 8: City of Toronto Noise Control Bylaw

Jurisdiction	Bylaw Number	Bylaw Provision
City of Toronto	878-2019	**§ 591-3.1. Safety and government work.** Despite any other provision of this chapter, it shall be lawful to emit or cause or permit the emission of sound from: A. Bells or sirens required for the purposes of public safety including sirens when operated by Police Services, Fire and Paramedic Services, or bells or whistles operated by rail or transit services; B. Measures undertaken for the immediate health, safety or welfare of persons under emergency circumstances; C. Measures undertaken as a result of an emergency requiring immediate action for the construction, preservation, restoration or demolition of any highway; or D. Government work.

3.2 Anticipated Construction Activities

The following construction activities are anticipated as part of this project:

- Removing some existing surface pavements;
- Construction of the roadway widening, including removal of overburden;
- Paving of new roadway surfaces; and,
- repaving of some of the existing roadways.

3.3 Construction Code of Practice Requirements (Mitigation)

To minimize the potential for construction noise impacts, it is recommended that provisions be written into the contract documentation for the contractor, as outlined below:

- Where possible construction should be carried out during the normally allowed hours specified in the bylaw found in Appendix E. If construction activities are required outside of these hours, the Contractor should minimize the amount of noise being generated to not be clearly audible in any noise sensitive areas.
- There should be explicit indication that the Contractor is expected to comply with all applicable requirements of the contract.

All equipment should be properly maintained to limit noise emissions. As such, all construction equipment should be operated with effective muffling devices that are in good working order. This is also a requirement of the local noise control bylaws.

4.0 CONCLUSIONS AND RECOMMENDATIONS

The potential environmental noise impacts of the proposed undertaking have been assessed. Both operational and construction noise impacts have been considered. The conclusions and recommendations are as follows:

- The results show that changes in sound levels resulting from the proposed project are expected to be negligible.
- Noise impacts are extremely minor and well less than the 5 dBA impact criteria in the Noise Protocol. No additional noise mitigation is recommended.
- Construction noise impacts are temporary in nature but may be noticeable at times in nearby residential NSAs. Methods to minimize construction noise impacts should be included in the Construction Code of Practice, as outlined in Sections 3.1.3 and Section 3.3.

5.0 REFERENCES

Ontario Ministry of the Environment, Conservation and Parks (MECP) / Ontario Ministry of Transportation (MTO), 1986, "Joint Protocol", *A Protocol for Dealing with Noise Concerns During the Preparation, Review and Evaluation of Provincial Highway's Environmental Assessments*

Ontario Ministry of the Environment, Conservation and Parks (MECP), 1989, Ontario Road Noise Analysis Method for Environment and Transportation (ORNAMENT)

Ontario Ministry of the Environment and Climate Change (MECP), 2000, STAMSON v5.04: Road, Rail and Rapid Transit Noise Prediction Model

Ontario Ministry of the Environment, Conservation and Parks (MECP), 1977b, *Model Municipal Noise Control Bylaw,* which includes Publication NPC-115 – Construction Equipment

Ontario Ministry of the Environment, Conservation and Parks (MECP), 1977c, *Model Municipal Noise Control Bylaw,* which includes Publication NPC-119 – Noise from Blasting

Ontario Ministry of Transportation (MTO), 1992a, Quality and Standards Directive QST-A1, Noise Policy and Acoustic Standards for Provincial Highways

Ontario Ministry of Transportation (MTO), *Environmental Guide for Noise (2006),* Revised 2008.

Ontario Ministry of the Environment, Conservation and Parks (MECP) Publication NPC-207 - Impulse Vibration in Residential Buildings, Revised November 1983.

Ontario Provincial Standard Specification OPSS MUNI 120: *General Specification for the Use of Explosives.*

Transit Noise and Vibration Impact Assessment, Federal Transit Administration, FTA-VA-90-1003-06, May 2006.

The City of Toronto, Noise Bylaw Number 878-2019, 2019.

6.0 STATEMENT OF LIMITATIONS

This report has been prepared and the work referred to in this report has been undertaken by SLR Consulting (Canada) Ltd. (SLR) for the City of Toronto and Steer Davies Gleave, hereafter referred to as the "Client". It is intended for the sole and exclusive use of the Client. The report has been prepared in accordance with the Scope of Work and agreement between SLR and the Client. Other than by the Client and as set out herein, copying or distribution of this report or use of or reliance on the information contained herein, in whole or in part, is not permitted unless payment for the work has been made in full and express written permission has been obtained from SLR.

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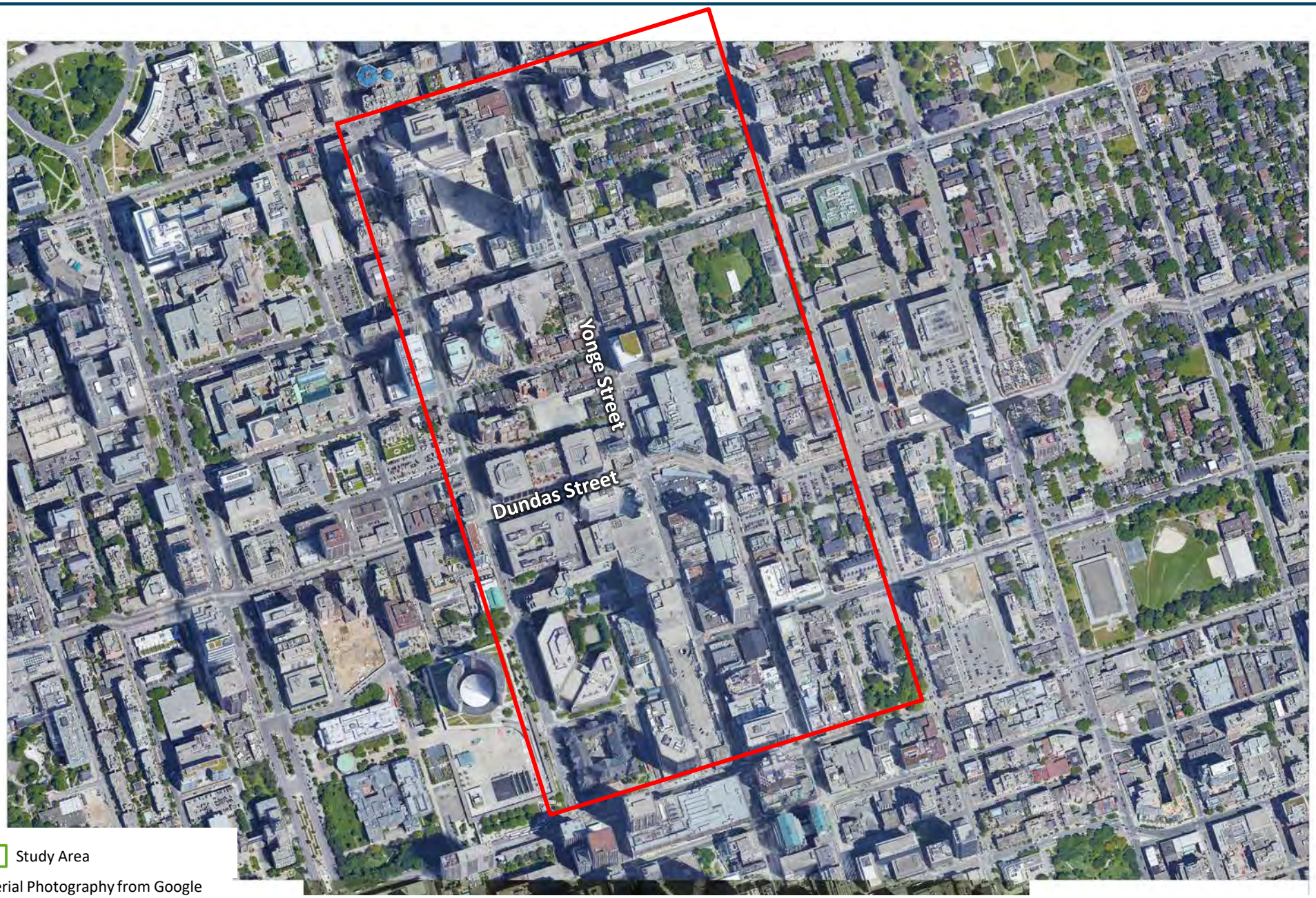
FIGURES

Environmental Noise Assessment – Yonge Street from Queen Street to Carlton/College Street

City of Toronto

SLR Project No: 241.16362.A0000



Study Area

Aerial Photography from Google

CITY OF TORONTO

YONGE STREET ENVIRONMENTAL ASSESSMENT

NOISE STUDY AREA

True North

Scale: 1: 7,500

METRES

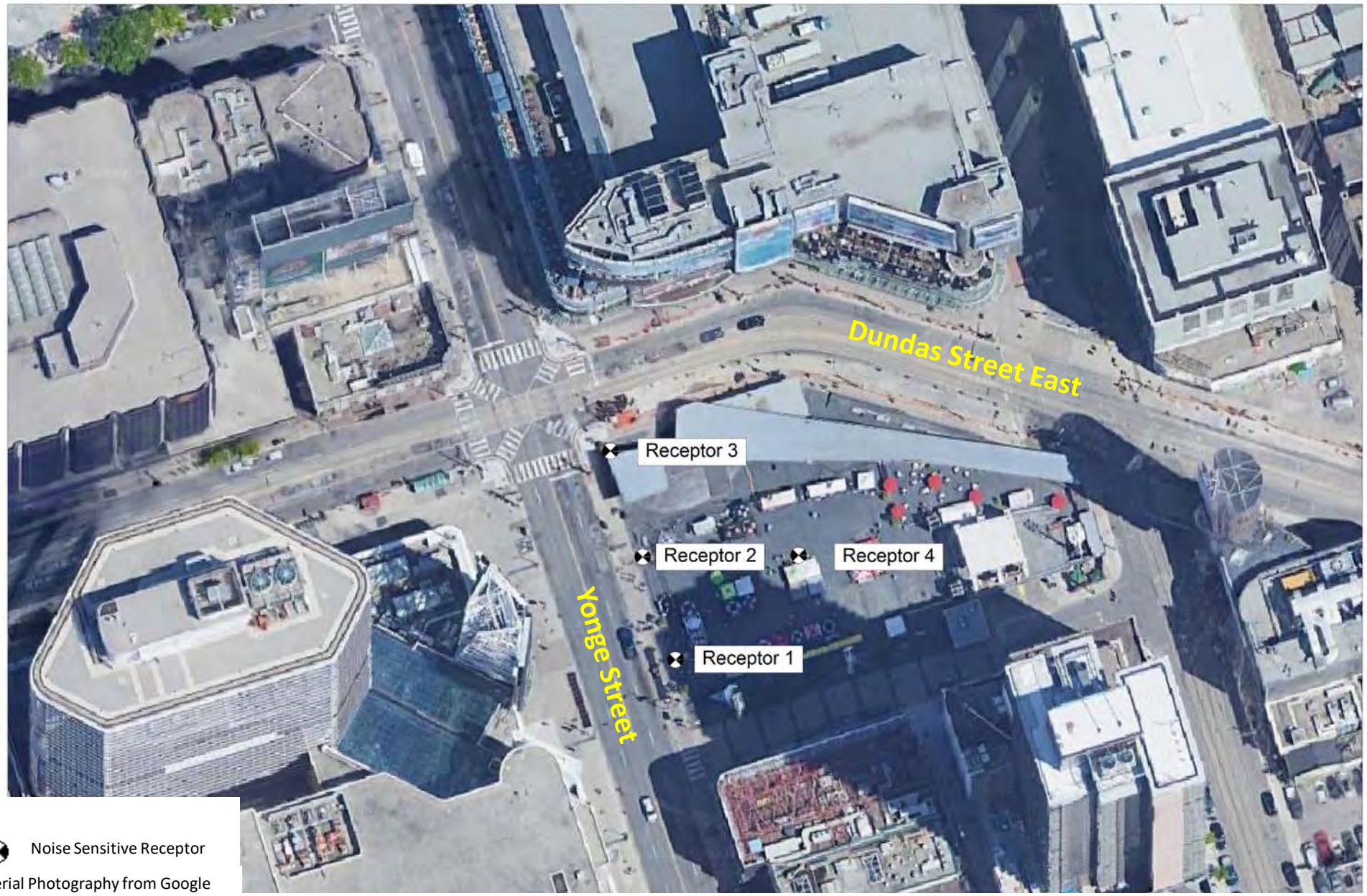
Date: Jan 14, 2021

Rev 0.0

Project No. 16-0362

Figure No. **1**

SLR global environmental solutions

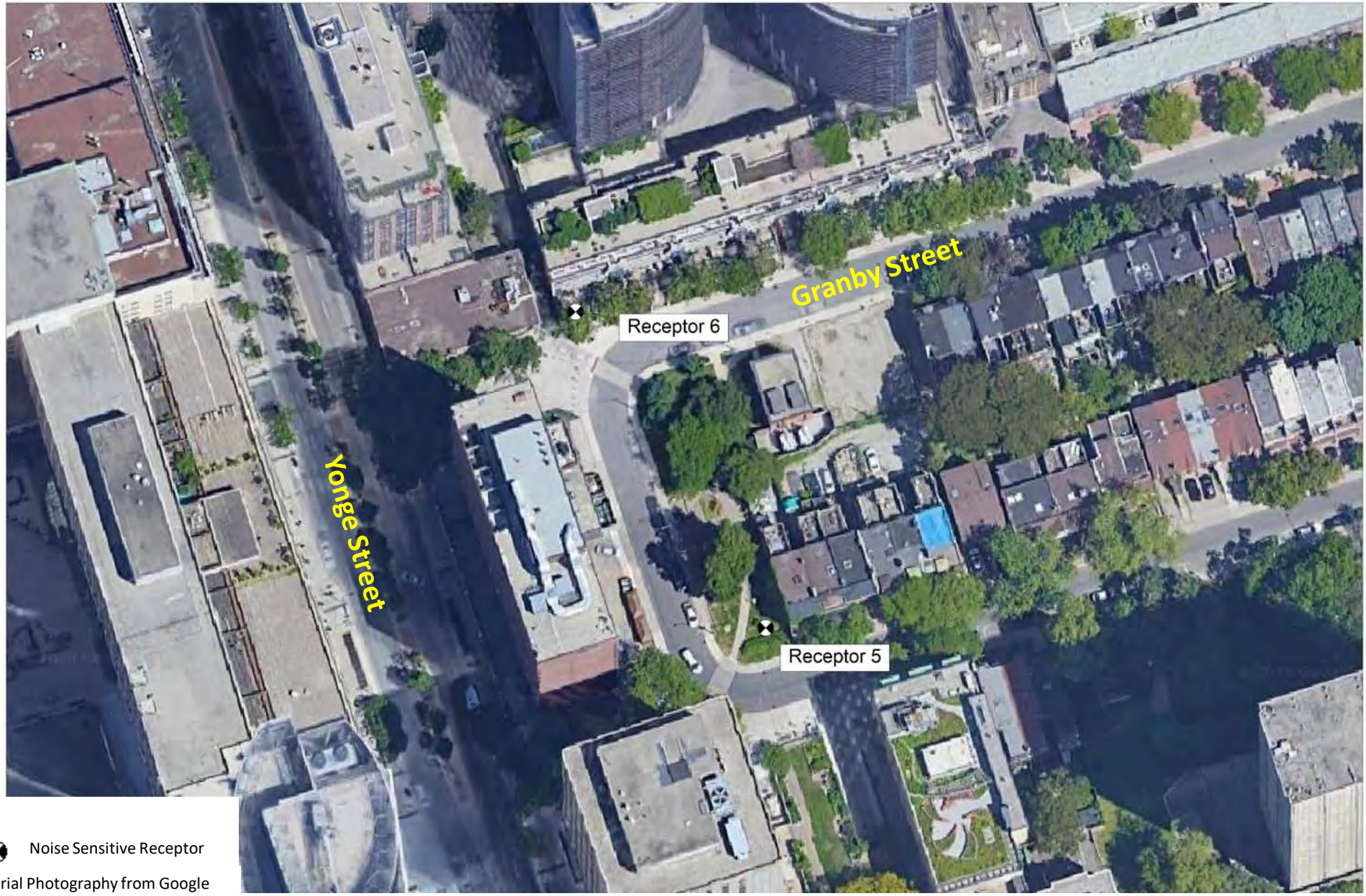


Noise Sensitive Receptor

Aerial Photography from Google

CITY OF TORONTO	True North	Scale: 1: 1,000	METRES
YONGE STREET ENVIRONMENTAL ASSESSMENT		Date Jan 14, 2021 Rev 0.0	Figure No. **2**
NOISE SENSITIVE RECEPTORS 1 TO 4		Project No. 16-0362	

SLR global environmental solutions

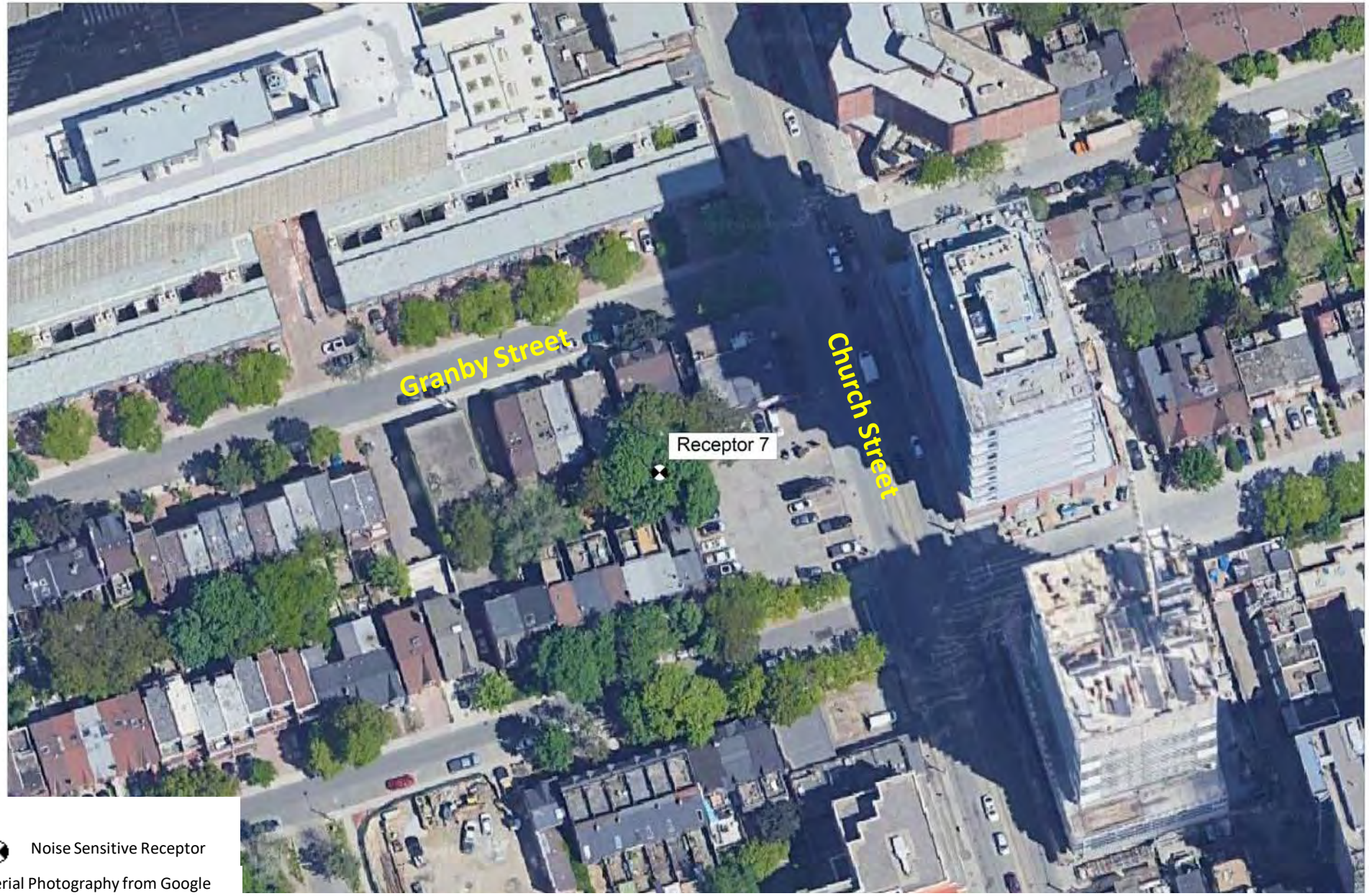


Noise Sensitive Receptor

Aerial Photography from Google

CITY OF TORONTO	True North	Scale: 1: 1,000	METRES
YONGE STREET ENVIRONMENTAL ASSESSMENT		Date: Jan 14, 2021 Rev 0.0	Figure No. **3**
NOISE SENSITIVE RECEPTORS 5 AND 6		Project No. 16-0362	

SLR global environmental solutions

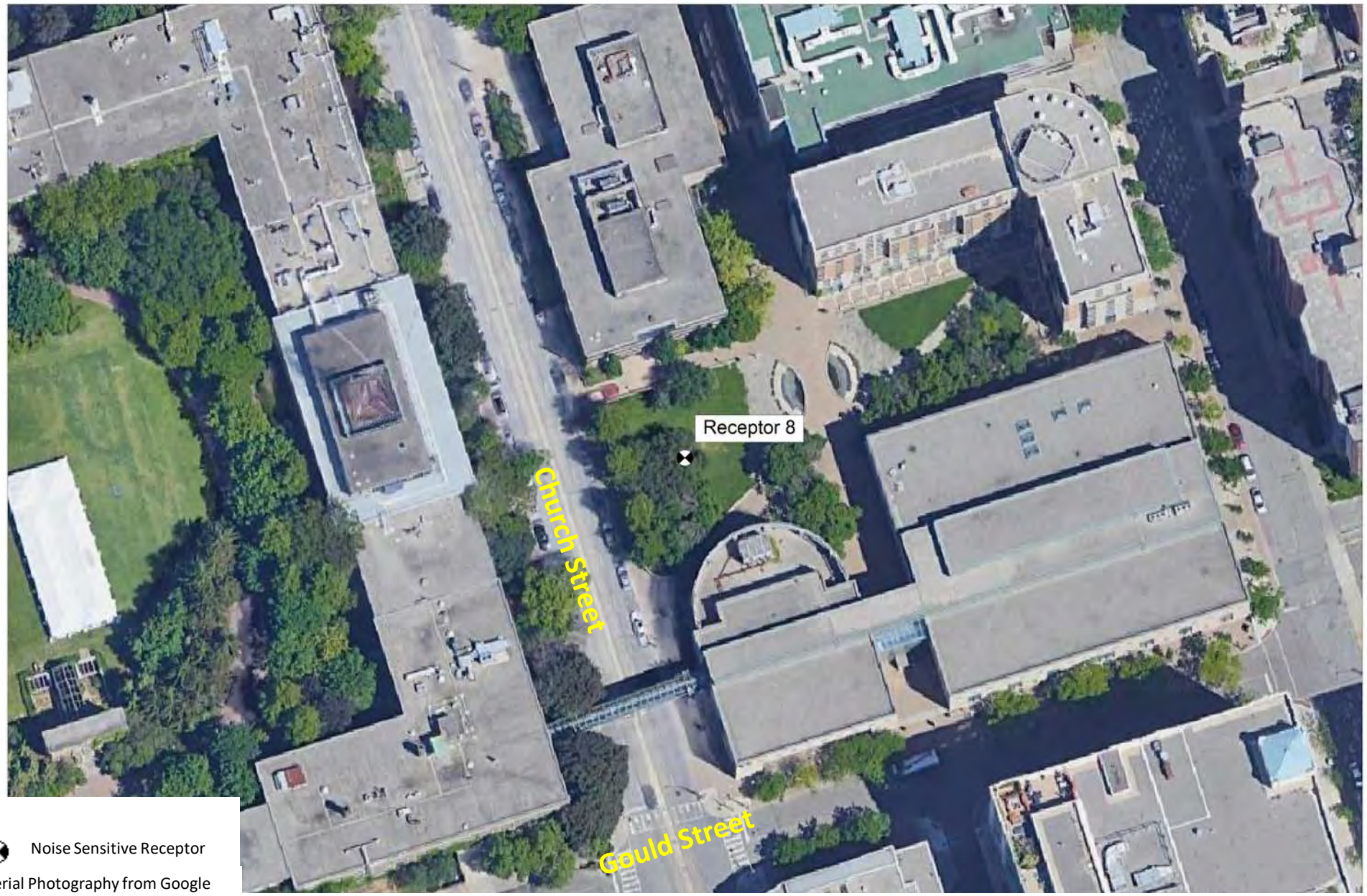


Noise Sensitive Receptor

Aerial Photography from Google

CITY OF TORONTO	True North	Scale: 1: 1,000	METRES
YONGE STREET ENVIRONMENTAL ASSESSMENT		Date: Jan 14, 2021 Rev 0.0	Figure No. **4**
NOISE SENSITIVE RECEPTOR 7		Project No. 16-0362	

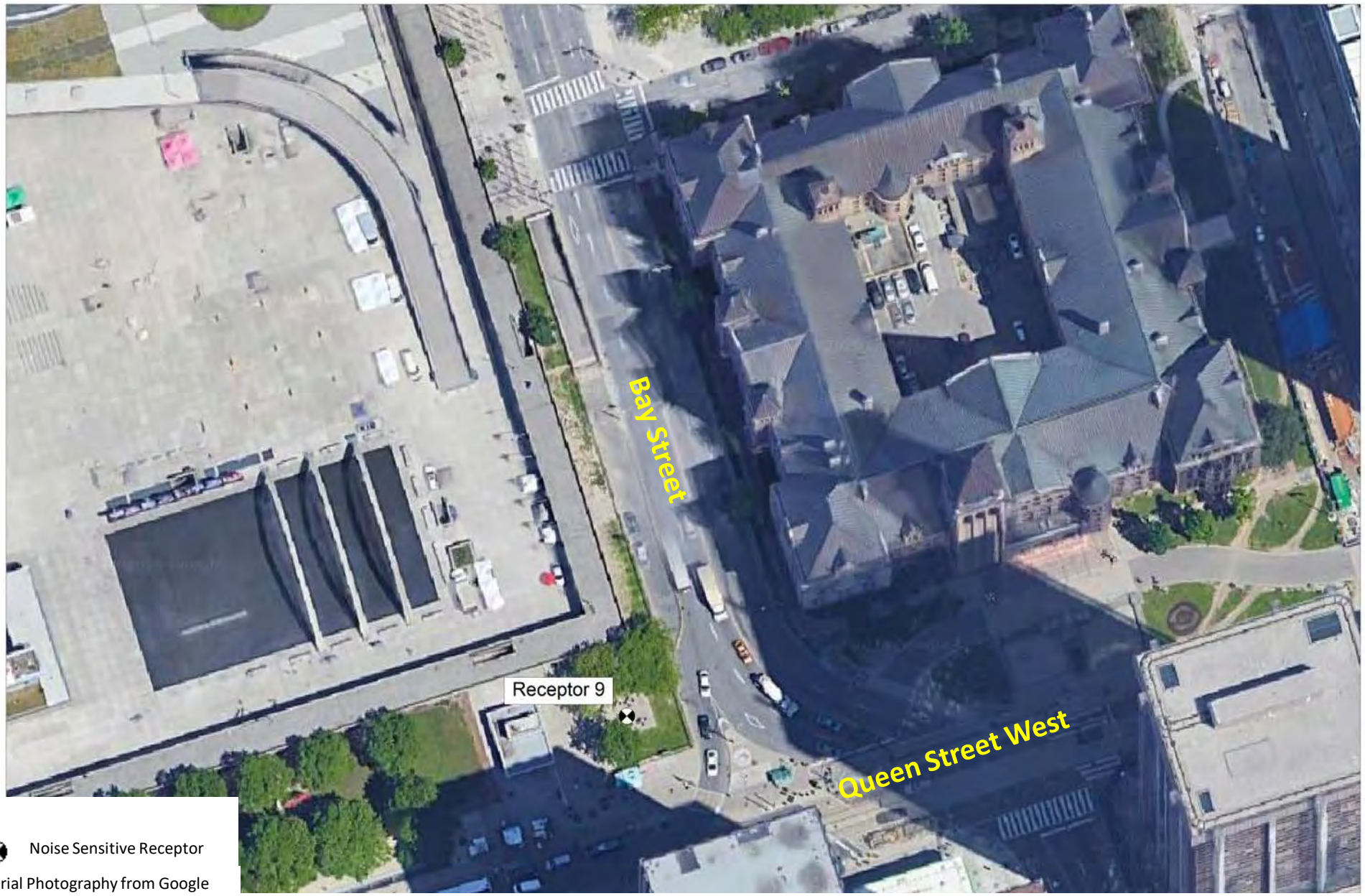
SLR global environmental solutions



Noise Sensitive Receptor

Aerial Photography from Google

CITY OF TORONTO	True North	Scale: 1: 1,000	METRES	SLR global environmental solutions
YONGE STREET ENVIRONMENTAL ASSESSMENT		Date: Jan 14, 2021 Rev 0.0	Figure No. **5**	
NOISE SENSITIVE RECEPTOR 8		Project No. 16-0362		

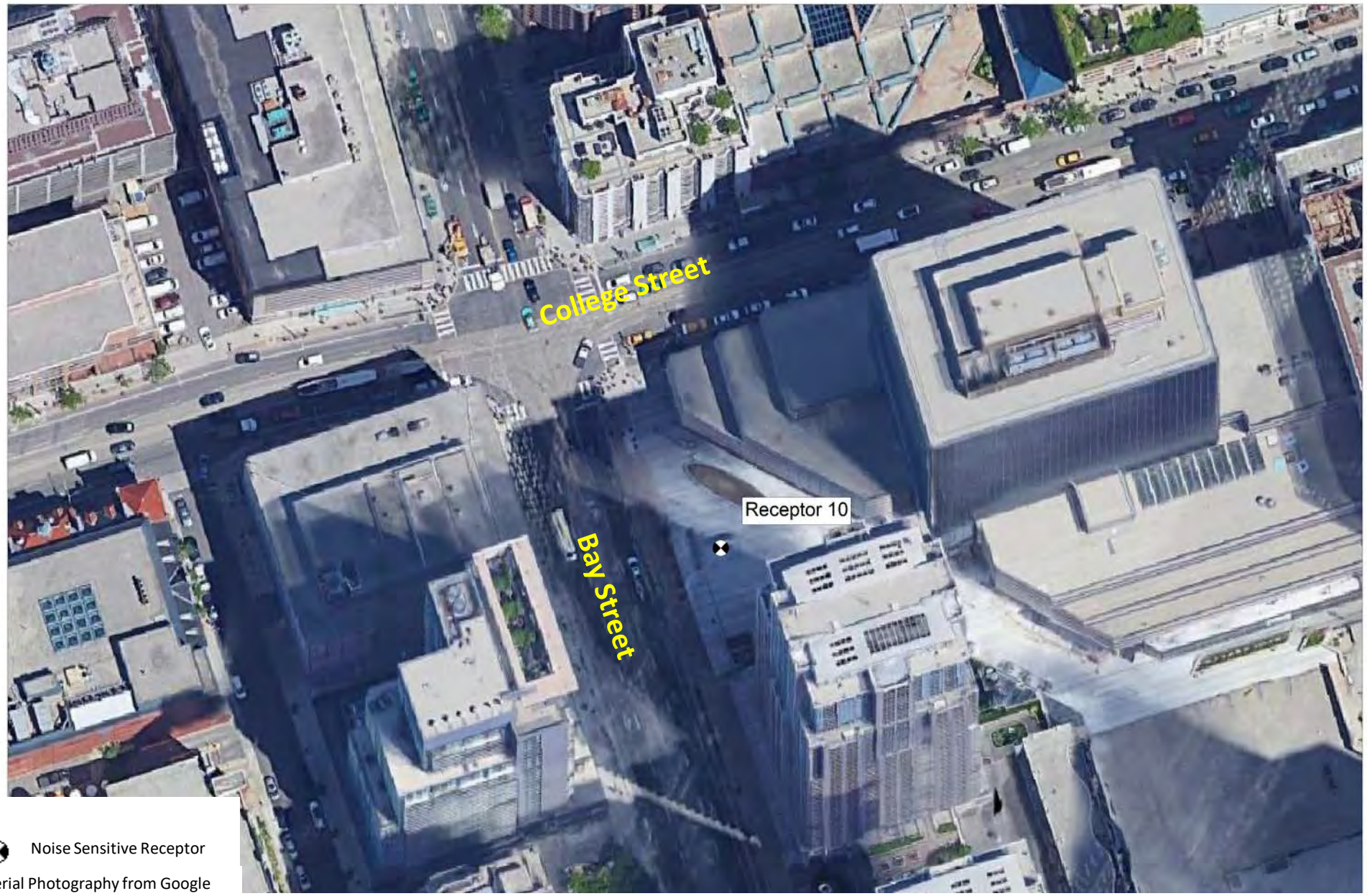


Noise Sensitive Receptor

Aerial Photography from Google

CITY OF TORONTO	True North	Scale: 1: 1,000	METRES
YONGE STREET ENVIRONMENTAL ASSESSMENT		Date: Jan 14, 2021 Rev 0.0	Figure No. **6**
NOISE SENSITIVE RECEPTOR 9		Project No. 16-0362	

SLR global environmental solutions



Noise Sensitive Receptor

Aerial Photography from Google

CITY OF TORONTO	True North	Scale: 1: 1,000	METRES
YONGE STREET ENVIRONMENTAL ASSESSMENT		Date: Jan 14, 2021 Rev 0.0	Figure No. **7**
NOISE SENSITIVE RECEPTOR 10		Project No. 16-0362	

SLR global environmental solutions

APPENDIX A - Terms, Glossary

Environmental Noise Assessment – Yonge Street from Queen Street to Carlton/College Street

City of Toronto

SLR Project No: 241.16362.A0000

Transportation Sound Basics

Sound Levels

Sound is, in its simplest form, a dynamic, fluctuating pressure, in a fluid medium. That medium can be air, other gases, or liquids such as water. These fluctuations are transmitted by pressure waves through the medium from the source to the receiver. For the majority of transportation engineering purposes, the primary interest is with sound waves in air, with human beings as the receptor. Noise is defined as unwanted sound. The standard practice within the acoustical industry is to use these two terms interchangeably.

Decibels

A decibel (dB) is a logarithmic ratio of a value to a reference level. The general mathematical format is:

$$\text{Level in dB} = 10 \log (\text{Value} / \text{Reference})$$

Any value can be expressed in decibels. Decibels are very, very useful in performing comparisons where there are huge ranges in levels. For example, an acoustical engineer can expect to deal with acoustical energy values ranging from 0.00001 W to 100 W (sound power), and pressures ranging from 0.002 Pa to 200 Pa (sound pressure)[1]. For completeness, decibels should always be stated with their reference level (e.g., 20 dB re: 20 µPa). However, in practice the reference level is often left out.

Sound Pressure Level

Sound pressure level is what humans experience as sound. Sound waves create small fluctuations around the normal atmospheric pressure. These pressure fluctuations come into contact with eardrums and create the sensation of sound. Sound pressure is measured in decibels, according to the following equation:

$$\text{Sound Pressure Level, dB} = 10 \log (p^2/p_0^2))$$

Where: p = root mean square (r.m.s.) sound pressure, in Pa
p_o = reference sound pressure, 20 µPa

The reference pressure represents the faintest sound that a “typical” human being can hear. The typical abbreviation for sound pressure level is SPL, although Lp is also often used in equations. “Sound level” or “noise level” are also sometimes used.

Octave Bands

Sounds are composed of varying frequencies or pitches. Human sensitivity to noise varies by frequency, with a greater sensitivity to higher frequency sounds. The propagation of sound also varies by frequency. The unit of frequency is Hertz (Hz), which refers the number of cycles per second (number of wave peaks per second of the propagating sound wave). The typical human hearing response runs from 20 Hz to 20,000 Hz. Frequencies below 20 Hz are generally inaudible, although response is variable, and some individuals may be able to hear or perceive them.

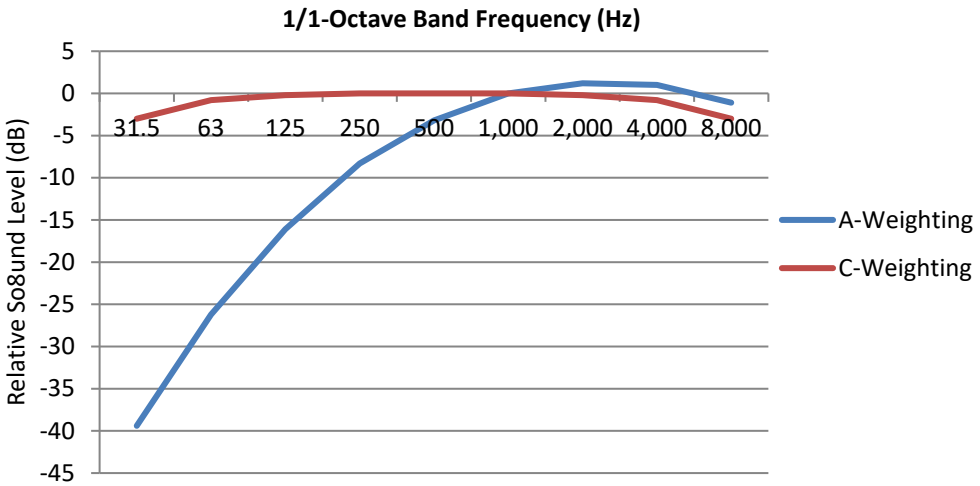
Sound is typically analysed in octave bands or 1/3-octave bands. An octave band is defined as a band or range of sound frequencies where the frequency range doubles for succeeding octave (alternately, the highest frequency in the range is twice the value of the lowest frequency).

[1] Equivalent to Sound Power Levels ranging from 70 to 140 dB and Sound Pressure Levels ranging from 20 dB to 140 dB

A-Weighting

When the overall sound pressure level is expressed as a single value (i.e., not expressed in frequency band levels) the variation in human frequency response must be accounted for. People do not hear low frequency noise as well as noise in mid or high frequencies. To account for this, frequency-weighting networks have been developed to better account for human hearing response. The most frequently used networks are the A-Weighting and C-Weighting.

The A-Weighting network was developed to correspond to how humans hear low to medium levels of noise, such as those typically generated by road traffic. The A-Weighting is the most frequently used scheme, and the majority of noise guidelines are expressed in A-Weighted decibel values, denoted as "dBA" levels. C-Weighted "dBC" values are sometimes used in assessing low-frequency noise impacts, which are generally not of concern in transportation noise impact assessment. The A-Weighting and C-Weighting values are shown in the following figure.



A-Weighting and C-Weighting Networks

Ranges of Sound Levels

People experience a wide range of sound levels in their daily activities. The table below presents a graphical comparison of "typical" noise levels which might be encountered, and the general human perception of the level. Sound levels from 40 to 65 dBA are in the faint to moderate range. The vast majority of the outdoor noise environment, even within the busiest city cores, will lie within this area. Sound levels from 65 to 90 dBA are perceived as loud. This area includes very noisy commercial and industrial spaces. Sound levels greater than 85 dBA are very loud to deafening and may result in hearing damage.

Ranges of Sound Levels

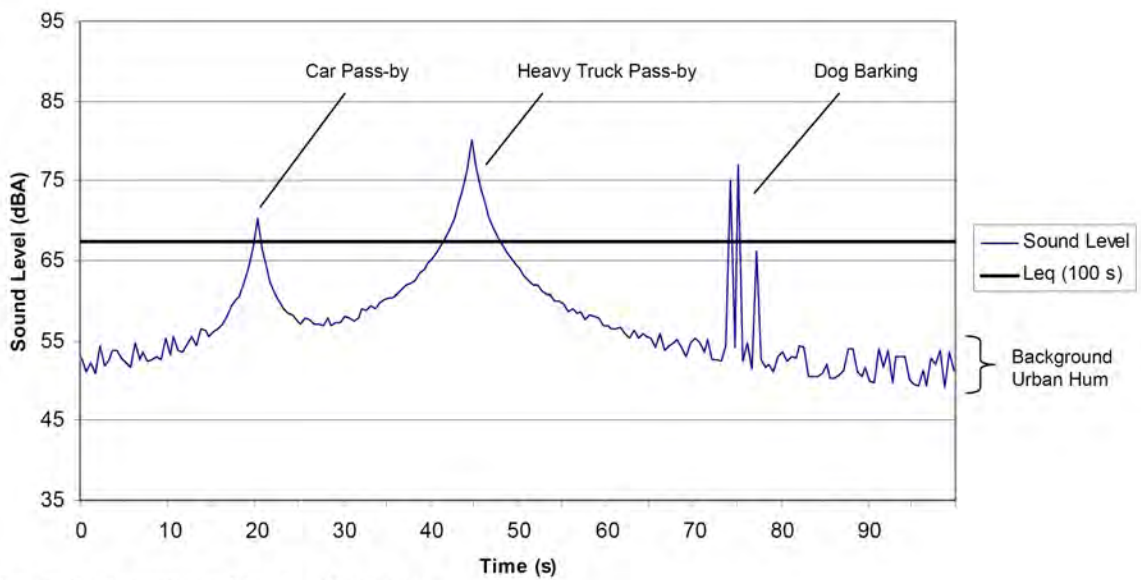
Sound Levels		
Human Perception	**SPL in dBA**	**Sources of Noise**
Deafening	125	Sonic booms
	120	Threshold of Feeling / Pain
	115	Maximum level, hard rock band concert
	110	Accelerating Motorcycle at a few feet away
Very Loud	105	Loud auto horn at 3 m away
	100	Dance club / maximum human vocal output at 1 m distance
	95	Jack hammer at 15 m distance
	90	Indoors in a noisy factory
Loud	85	Heavy truck pass-by at 15 m distance
	80	School cafeteria / noisy bar; Vacuum cleaner at 1.5 m
	75	Near edge of major highway
	70	Inside automobile at 60 km/h
	65	Normal human speech (unraised voice) at 1 m distance
Moderate	60	Typical background noise levels in a large department store
	55	General objective for outdoor sound levels; typical urban sound level (24h)
	50	Typical suburban / semi-rural sound level (24h)
	45	Typical noise levels in an office due to HVAC; typical rural levels (24h)
Faint	40	Typical background noise levels in a library
	35	
	30	Broadcast Studio
	25	Average whisper
Very Faint	20	Deep woods on a very calm day
	15	
	10	
	5	Human breathing
	0	Quietest sound that can be heard

Noise Descriptors – L_{eq} Values

At this time, the best available research indicates that long-term human responses to noise are best evaluated using energy equivalent sound exposure levels (L_{eq} values), in A-Weighted decibels (L_{eq} values in dBA)[2,3] including adjustments to account for particularly annoying characteristics of the sounds being analyzed.

Sound levels in the ambient environment vary each instant. In a downtown urban environment, the background noise is formed by an “urban hum”, composed of noise from distant road traffic and from commercial sources. As traffic passes near a noise receptor, the instantaneous sound level may increase as a vehicle approaches, and then decrease as it passes and travels farther away. The energy equivalent sound exposure level L_{eq} is the average sound level over the same period of time with same acoustical energy as the actual environment (i.e., it is the average of the sound energy measured over a time period T). As a time-average, all L_{eq} values must have a time period associated with them. This is typically placed in brackets beside the L_{eq} tag. For example, a thirty-minute L_{eq} measurement would be reported as an L_{eq} (30 min) value. The L_{eq} concept is illustrated in the following figure, showing noise levels beside a small roadway, over a 100 second time period, with two vehicle pass-bys:

[2] Berglund and Lindvall, Community Noise, 1995.
[3] ISO 1996:2003(E), Acoustics – Description, measurement and assessment of environmental noise – Part 1: Basic quantities and assessment procedures.



The L_{eq} Concept

In this example, the background "urban hum" is between 47 and 53 dBA. A car passes by at 20 seconds. As it approaches, the noise level increases to a maximum, and then decreases as it speeds away. At 45 seconds, a heavy truck passes by. Near 75 seconds, a dog barks three times. The maximum sound level (L_{max}) over the period is 80 dBA and the minimum is 47 dBA. For almost 50 % of the time, the sound level is lower than 55 dBA.

The L_{eq} (100s) for the example is 67 dBA, which is much higher than the statistical mean sound level of 55 dBA. This illustrates that the L_{eq} value is very sensitive to loud noise events, which contain much more sound energy (as sound is ranked on a logarithmic scale) than the normal background. It is also sensitive to the number of events during the time period, and the duration of those events. If only the truck had passed by during the measurement (no car and no dog barks), the L_{eq} (100s) would be 66 dBA. If only the car and dog barks had occurred, the L_{eq} (100s) would be 61 dBA. This shows that the truck pass-by is the dominant event in our example, due to its level and duration.
The ability of the L_{eq} metric to account for the three factors of level, duration and frequency of events makes it a robust predictor of human response to noise. It is for this reason that the vast majority of noise standards are based on L_{eq} values.

Typical Durations for L_{eq} Analyses

For transportation noise impact analyses, the following durations are typically used:

L_{eq} (24h) – The sound exposure level over then entire 24-hour day
L_{eq} Day – Either: L_{eq} (15h), from 7am to 10 pm; or L_{eq} (16h), from 7am to 11 am
L_{eq} Night – Either: L_{eq} (9h), from 10 pm to 7 am; or L_{eq} (8h), from 11 pm to 7 am
L_{dn} – A special L_{eq} (24h) value with a 10 dB night-time penalty applied to overnight sound levels (10pm to 7am)
L_{eq} (1-h) – The sound exposure over a 1-hour time period

L_{eq} (24h) values are appropriate for examining impacts of transportation noise sources with small changes in sound exposure levels over the 24-hour day. For example, freeway noise levels are generally consistent over the 24-hour day. Therefore, for freeways, there is little difference between L_{eq} (24h) values and the corresponding L_{eq} Day and L_{eq} Night values.

L_{eq} Day values, covering off the AM-peak and PM-peak travel periods, are generally appropriate for examining the impacts of non-freeway highways and municipal arterial roadways. The vast majority of noise associated with these sources is concentrated in the daytime hours, where typically, 85% to 90% of the daily road traffic will occur.[4] Thus, if reasonable sound levels occur during the daytime (and appropriate guideline limits are met), they will also occur (and be met) at night.

To account for increased annoyance with noise overnight in a single value, the U.S. Environmental Protection Agency (U.S. EPA) developed the L_{dn} metric (also known as DNL). It is a special form of the L_{eq} (24h) with a +10 dB night-time penalty. L_{dn} values and a related metric, the day-evening-night level (L_{den}) are also used in some European guidelines. L_{dn} values are not used in Provincial jurisdictions in evaluating transportation noise. Instead, guideline limits for separate L_{eq} Day and L_{eq} Night periods are generally used.

L_{eq} (1-h) values are the average sound levels over a one-hour time period. These tend to fluctuate more over the day, as traffic levels can fluctuate significantly hour to hour. L_{eq} (1-h) values are useful in assessing the impact of transportation sources which also vary hourly, and which may vary in a different manner than the background traffic. These values are often used to assess haul route noise impacts, for example.

Some transportation noise sources may have significant traffic levels occurring overnight. For example, freight rail traffic in heavily used corridors can be shifted to over-night periods, with daytime track use being reserved for freight switcher traffic and passenger traffic. In situations such as this, an assessment of both daytime and night-time noise impacts may be appropriate.

Typical Background Sound Levels

Typical ambient background sound levels removed from direct influence of roads, railways and air traffic are:

- Urban areas: 55 dBA during the day, 45 dBA at night;
- Sub-urban / semi-rural areas: 50 dBA during the day, 45 dBA at night; and
- Rural area: 45 dBA during the day, 40 dBA at night.

Human Response to Changes in Sound Levels

The human ear does not interpret changes in sound level in a linear manner. The general subjective human perception of changes in sound level is shown in the following table.

[4] Based on research conducted by Ontario Ministry of Transportation and provided in the *MTO Environmental Office Manual Technical Areas – Noise.* Daytime refers to a 16 hour day from 7am to 11 pm.

Subjective Human Perception of Changes in Sound Levels[5,6]

Change in Broadband Sound Level (dB)	Human Perception of Change
<3	Imperceptible change
3	Just-perceptible change
4 to 5	Clearly noticeable change
6 to 9	Substantial change
>10 and more	Very substantial change (half or twice as loud)
>20 and more	Very substantial change (much quieter or louder)

Notes:
Adapted from Bies and Hansen, p53, and MOE Noise Guidelines for Landfill Sites, 1998. Applies to changes in broadband noise sources only (i.e., increases or decreases in the same noise or same type of noise only). Changes in frequency content or the addition of tonal or temporal changes would affect the perception of the change.

The above table is directly applicable to changes in sound level where the noise sources are of the same general character. For example, existing road traffic noise levels can be directly compared to future road traffic noise levels, using the above relationships. In comparing road traffic noise to road plus rail traffic noise, the different frequency and temporal nature of the noise means that the rail noise may be more noticeable. Adjustments for the nature of the new sound can be applied to better account for temporal and frequency differences.

For transportation noise sources, research conducted by the U.S. Environmental Protection Agency indicates that a 5 dB change in sound levels is required to trigger a change in large-scale community response to noise. This correlates to a clearly noticeable increase in noise levels.

Decay of Noise with Distance

Noise levels decrease with increasing distance from a source of noise. The rate of decay is partially dependent on the nature of the ground between the source: whether it is hard (acoustically reflective) or soft (acoustically absorptive). Transportation noise sources in general act as *line sources* of sound. For line sources, the rate of decay is approximately:

- Hard ground: 3 dB for each doubling of distance from the source
- Soft ground: 5 dB for each doubling of distance from the source

[5] Bies, D.A., and C.H Hansen 1988. Engineering Noise – Theory and Practice, 2nd Ed. E & E & FN Spon, London, p 53.
[6] Ontario Ministry of the Environment 1998. Noise Guidelines for Landfill Sites. Queen's Printer for Ontario.

APPENDIX B – Technically Preferred Alternative

Environmental Noise Assessment – Yonge Street from Queen Street to Carlton/College Street

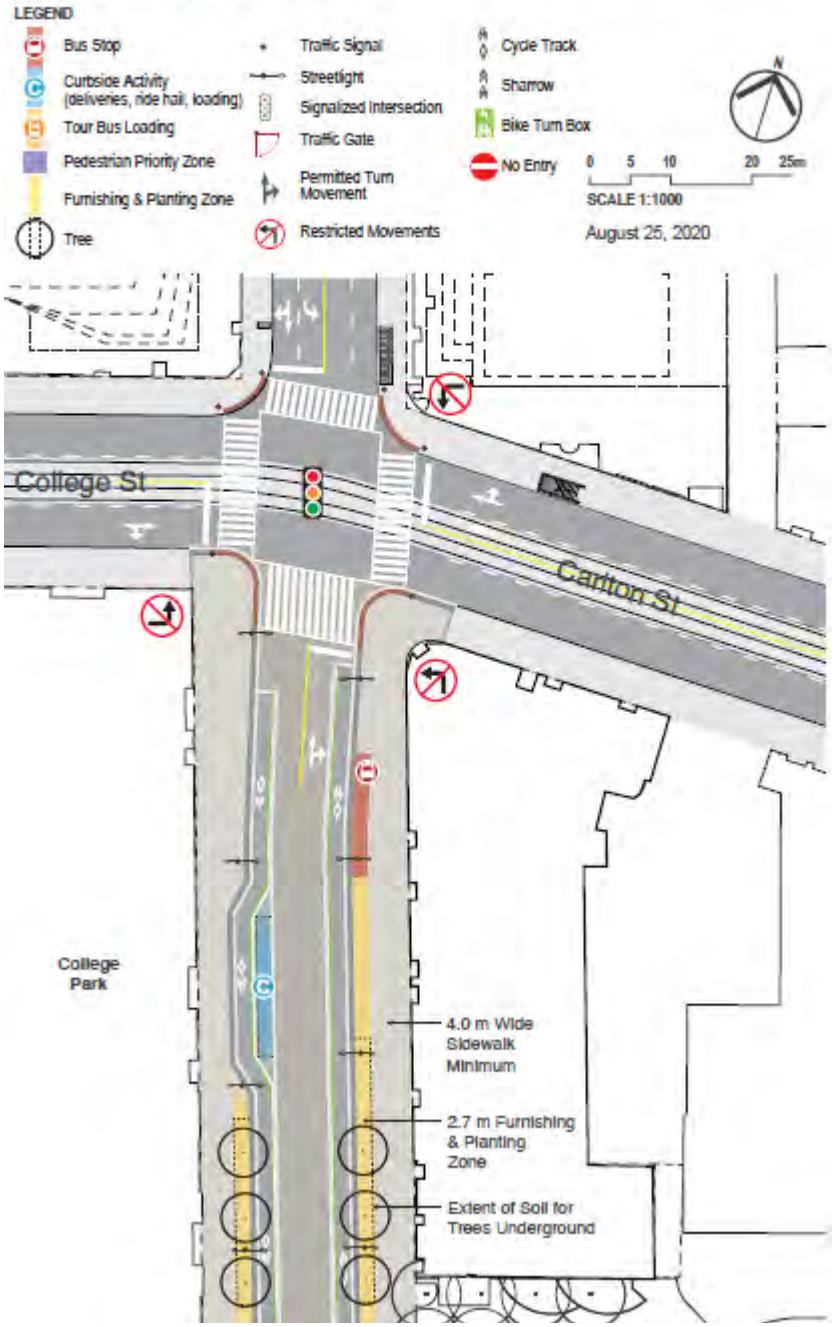
City of Toronto

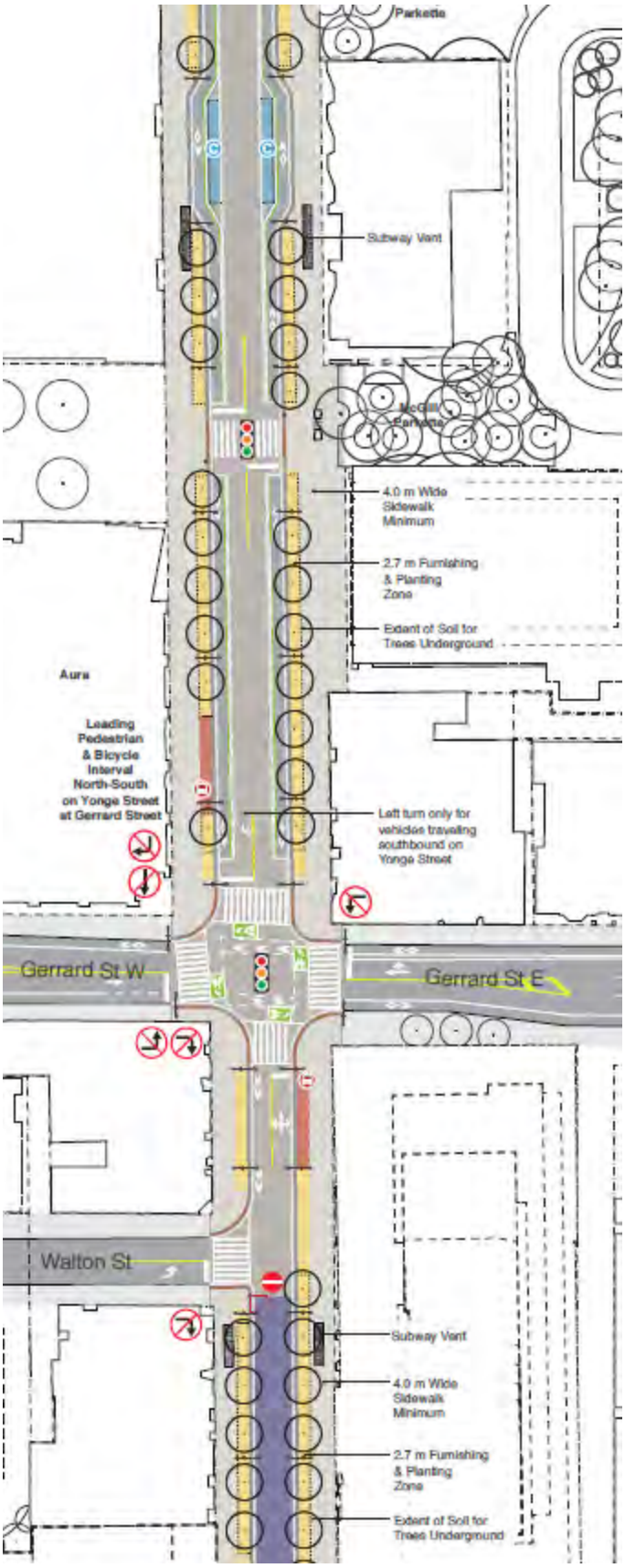
SLR Project No: 241.16362.A0000

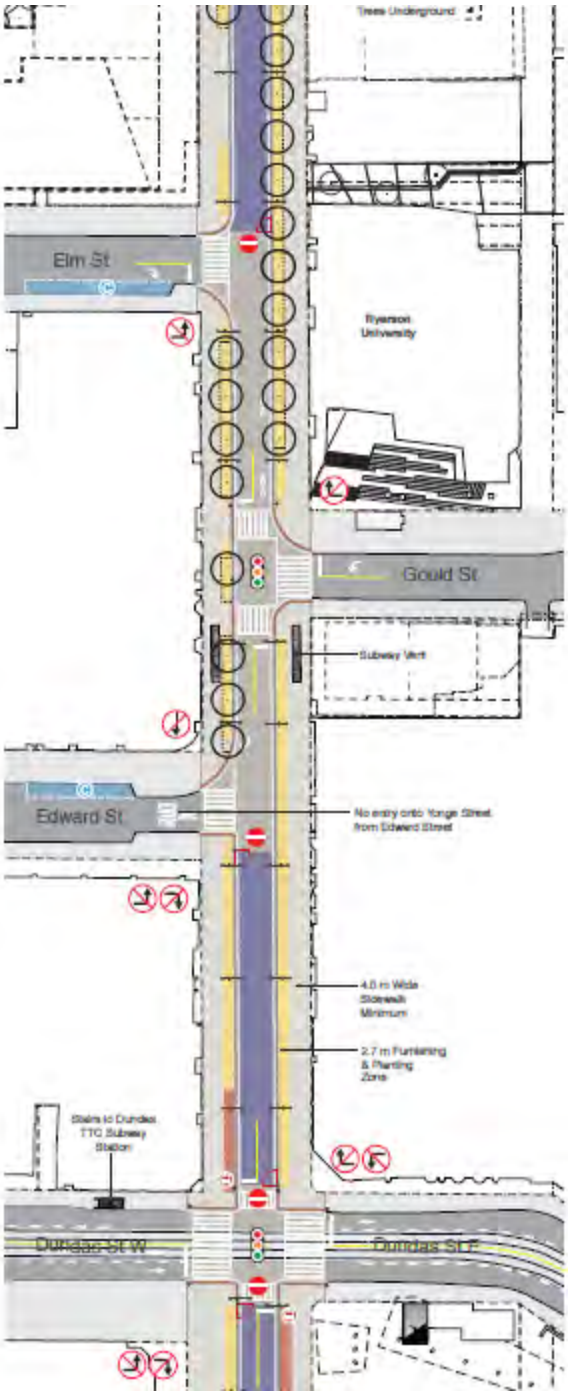
Recommended Design Concept 4C

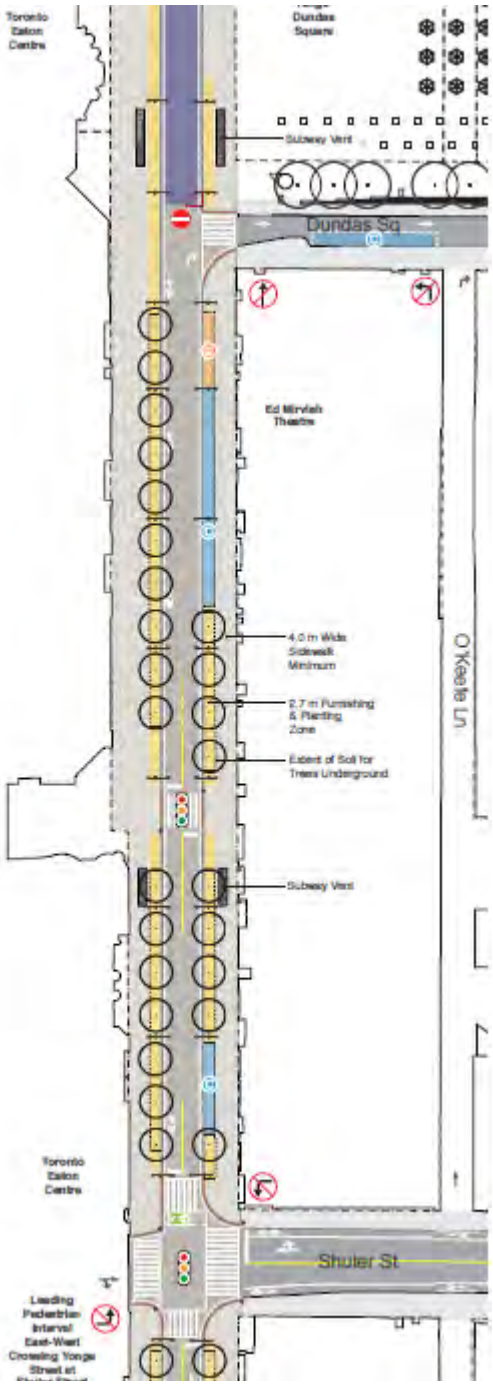
yongeTOmorrow

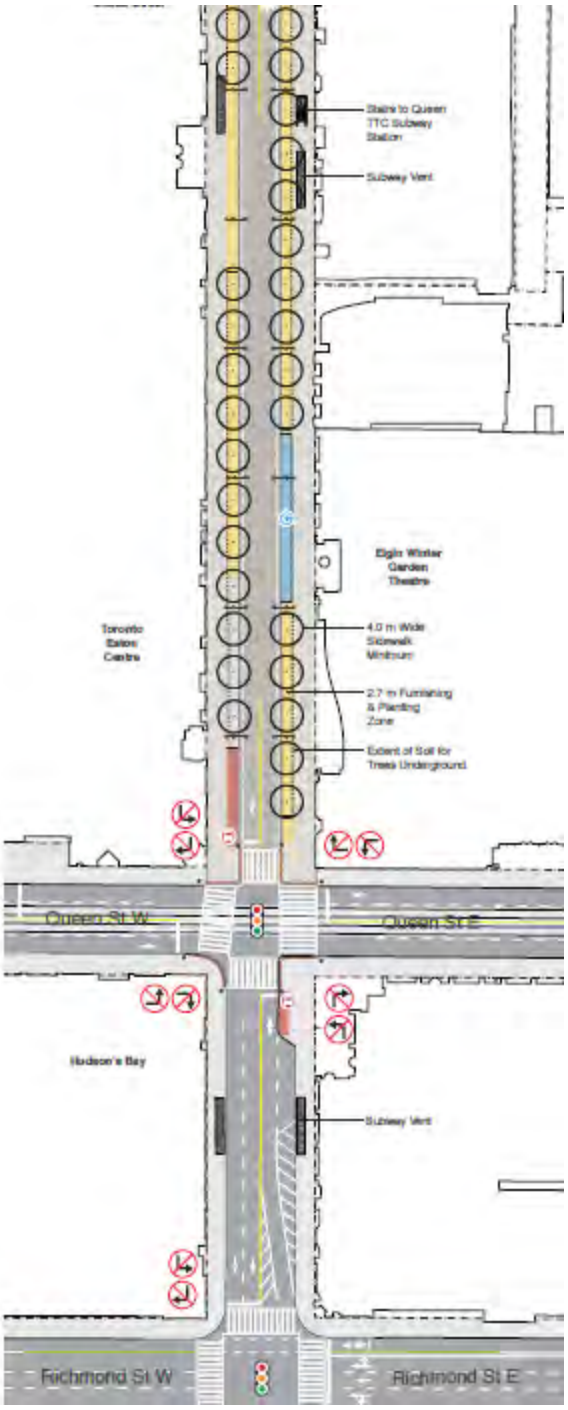
Pedestrian Priority Zones with
One-Way Driving Access (Gerrard Street to Walton Street & Elm Street to Edward Street) **and**
Cycle Tracks (College Street to Gerrard Street)




Parkette
Subway Vent
McGill Parkette
4.0 m Wide Sidewalk Minimum
2.7 m Furnishing & Planting Zone
Extent of Soil for Trees Underground
Aura
Leading Pedestrian & Bicycle Interval North-South on Yonge Street at Gerrard Street
Left turn only for vehicles traveling southbound on Yonge Street
Gerrard St W
Gerrard St E
Walton St
Subway Vent
4.0 m Wide Sidewalk Minimum
2.7 m Furnishing & Planting Zone
Extent of Soil for Trees Underground


Trees Underground
Elm St
Ryerson University
Gould St
Subway Vent
Edward St
No entry onto Yonge Street from Edward Street
4.8 m Wide Sidewalk Minimum
2.7 m Furnishing & Planting Zone
Stairs to Dundas TTC Subway Station
Dundas St W
Dundas St E


Toronto Eaton Centre
Dundas Square
Subway Vent
Dundas Sq
Ed Mirvish Theatre
4.0 m Wide Sidewalk Minimum
2.7 m Furnishing & Planting Zone
Extent of Soil for Trees Underground
O'Keefe Ln
Subway Vent
Toronto Eaton Centre
Shuter St
Leading Pedestrian Interval East-West Crossing Yonge Street at


Stairs to Queen TTC Subway Station
Subway Vent
Elgin Winter Garden Theatre
Toronto Eaton Centre
4.0 m Wide Sidewalk Minimum
2.7 m Furnishing & Planting Zone
Extent of Soil for Trees Underground
Queen St W
Queen St E
Hudson's Bay
Subway Vent
Richmond St W
Richmond St E

APPENDIX C – Road Traffic Data

Environmental Noise Assessment – Yonge Street from Queen Street to Carlton/College Street

City of Toronto

SLR Project No: 241.16362.A0000

Road Traffic Data for Yonge Street Queen Street to College Street

Road Segment ID	Roadway Name	Link Description	Speed (km/h)	AADT	Period (h)	Total Traffic Volumes Day 90%	Auto %	Truck %	Med %	Hvy %
2041 No Build										
Yonge_N1	Yonge St., South of Queen St. to Shuter St.	Daytime Impacts	50	3,854	16	3,469	96.6%	3.4%	1.7%	1.7%
Yonge_N2	Yonge St., Shuter St. to Dundas St.	Daytime Impacts	50	3,381	16	3,043	96.6%	3.4%	1.7%	1.7%
Yonge_N3	Yonge St., Dundas St. to Gould St.	Daytime Impacts	50	3,529	16	3,176	96.6%	3.4%	1.7%	1.7%
Yonge_N4	Yonge St., Gould St. to Gerrard St.	Daytime Impacts	50	3,917	16	3,525	96.6%	3.4%	1.7%	1.7%
Yonge_N5	Yonge St., Gerrard to N of College St.	Daytime Impacts	50	3,058	16	2,752	96.6%	3.4%	1.7%	1.7%
Yonge_S1	Yonge St., N of College St to Gerrard St.	Daytime Impacts	50	3,058	16	2,752	96.6%	3.4%	1.7%	1.7%
Yonge_S2	Yonge St., Gerrard St. to Gould St.	Daytime Impacts	50	1,855	16	1,669	96.6%	3.4%	1.7%	1.7%
Yonge_S3	Yonge St., Gould St. to Dundas St.	Daytime Impacts	50	2,250	16	2,025	96.6%	3.4%	1.7%	1.7%
Yonge_S4	Yonge St., Dundas St. to Shuter St.	Daytime Impacts	50	2,008	16	1,807	96.6%	3.4%	1.7%	1.7%
Yonge_S5	Yonge St., Shuter St. to South of Queen St.	Daytime Impacts	50	1,317	16	1,185	96.6%	3.4%	1.7%	1.7%
Queen_E1	Queen St., West of Yonge St.	Daytime Impacts	50	5,342	16	4,808	97.9%	2.1%	1.1%	1.1%
Queen_E2	Queen St., East of Yonge St.	Daytime Impacts	50	5,558	16	5,002	97.9%	2.1%	1.1%	1.1%
Queen_W1	Queen St., West of Yonge St.	Daytime Impacts	50	6,190	16	5,571	97.9%	2.1%	1.1%	1.1%
Queen_W2	Queen St., East of Yonge St.	Daytime Impacts	50	7,017	16	6,315	97.9%	2.1%	1.1%	1.1%
Shuter_E1	Shuter St., East of Yonge St.	Daytime Impacts	50	2,382	16	2,144	98.8%	1.2%	0.6%	0.6%
Shuter_W1	Shuter St., East of Yonge St.	Daytime Impacts	50	3,160	16	2,844	98.3%	1.7%	0.9%	0.9%
Dundas_E1	Dundas St., West of Yonge St.	Daytime Impacts	50	5,129	16	4,616	98.2%	1.8%	0.9%	0.9%
Dundas_E2	Dundas St., East of Yonge St.	Daytime Impacts	50	5,268	16	4,741	98.2%	1.8%	0.9%	0.9%
Dundas_W2	Dundas St., West of Yonge St.	Daytime Impacts	50	6,710	16	6,039	98.2%	1.8%	0.9%	0.9%
Dundas_W1	Dundas St., East of Yonge St.	Daytime Impacts	50	6,567	16	5,910	98.2%	1.8%	0.9%	0.9%
Gould_E1	Gould St., Yonge St. to O'Keefe Ln.	Daytime Impacts	50	633	16	570	91.7%	8.3%	4.1%	4.1%
Gould_W1	Gould St., O'Keefe Ln. to Yonge St.	Daytime Impacts	50	133	16	120	91.7%	8.3%	4.1%	4.1%
Gerrard_E1	Gerrard St.,West of Yonge St.	Daytime Impacts	50	3,878	16	3,490	96.2%	3.8%	1.9%	1.9%
Gerrard_E2	Gerrard St., East of Yonge St.	Daytime Impacts	50	4,400	16	3,960	96.2%	3.8%	1.9%	1.9%
Gerrard_W1	Gerrard St., East of Yonge St.	Daytime Impacts	50	4,463	16	4,017	96.2%	3.8%	1.9%	1.9%
Gerrard_W2	Gerrard St.,West of Yonge St.	Daytime Impacts	50	3,946	16	3,551	96.2%	3.8%	1.9%	1.9%
College_E1	College St., West of Yonge St.	Daytime Impacts	50	4,625	16	4,163	96.8%	3.2%	1.6%	1.6%
Carlton_E1	Carlton St., East of Yonge St.	Daytime Impacts	50	4,897	16	4,407	96.8%	3.2%	1.6%	1.6%
Carlton_W1	Carlton St., East of Yonge St.	Daytime Impacts	50	5,925	16	5,333	96.8%	3.2%	1.6%	1.6%
College_W1	College St., West of Yonge St.	Daytime Impacts	50	6,400	16	5,760	96.8%	3.2%	1.6%	1.6%
Bay_N1	Bay St., South of Queen St. to Dundas St.	Daytime Impacts	50	4,857	16	4,371	95.5%	4.5%	2.3%	2.3%
Bay_N2	Bay St., Dundas St. to Gerrard St.	Daytime Impacts	50	6,030	16	5,427	95.5%	4.5%	2.3%	2.3%
Bay_N3	Bay St., Gerrard to College St.	Daytime Impacts	50	6,764	16	6,088	95.5%	4.5%	2.3%	2.3%
Bay_N4	Bay St., College St. to Alexander St.	Daytime Impacts	50	6,764	16	6,088	95.5%	4.5%	2.3%	2.3%
Bay_S1	Bay St., Alexander St. to College St.	Daytime Impacts	50	4,667	16	4,200	95.5%	4.5%	2.3%	2.3%

Road Traffic Data for Yonge Street Queen Street to College Street

Road Segment ID	Roadway Name	Link Description	Speed (km/h)	AADT	Period (h)	Total Traffic Volumes Day 90%	Auto %	Truck %	Med %	Hvy %
Bay_S2	Bay St., College St to Gerrard St.	Daytime Impacts	50	4,667	16	4,200	95.5%	4.5%	2.3%	2.3%
Bay_S3	Bay St., Gerrard St. to Dundas St.	Daytime Impacts	50	4,341	16	3,907	95.5%	4.5%	2.3%	2.3%
Bay_S4	Bay St., Dundas St. to South of Queen St.	Daytime Impacts	50	4,026	16	3,623	95.5%	4.5%	2.3%	2.3%
Church_N1	Church St., South of Queen St. to Shuter St.	Daytime Impacts	50	2,942	16	2,648	96.9%	3.1%	1.6%	1.6%
Church_N2	Church St., Shuter St. to Dundas St.	Daytime Impacts	50	2,533	16	2,280	96.9%	3.1%	1.6%	1.6%
Church_N3	Church St., Dundas St. to Gould St.	Daytime Impacts	50	3,583	16	3,225	96.9%	3.1%	1.6%	1.6%
Church_N4	Church St., Gould St. to Gerrard St.	Daytime Impacts	50	3,933	16	3,540	96.9%	3.1%	1.6%	1.6%
Church_N5	Church St., Gerrard to North of College St.	Daytime Impacts	50	5,378	16	4,840	96.9%	3.1%	1.6%	1.6%
Church_S1	Church St., North of College St. to Gerrard St.	Daytime Impacts	50	4,325	16	3,893	96.9%	3.1%	1.6%	1.6%
Church_S2	Church St., Gerrard St. to Gould St.	Daytime Impacts	50	4,171	16	3,753	96.9%	3.1%	1.6%	1.6%
Church_S3	Church St., Gould St. to Dundas St.	Daytime Impacts	50	4,075	16	3,668	96.9%	3.1%	1.6%	1.6%
Church_S4	Church St., Dundas St. to Shuter St.	Daytime Impacts	50	3,642	16	3,278	96.9%	3.1%	1.6%	1.6%
Church_S5	Church St., Shuter St. to South of Queen St.	Daytime Impacts	50	3,471	16	3,124	96.9%	3.1%	1.6%	1.6%
2041 Build										
Yonge_N1	Yonge St., South of Queen St. to Shuter St.	Daytime Impacts	50	2,050	16	1,845	96.6%	3.4%	1.7%	1.7%
Yonge_N2	Yonge St., Shuter St. to Dundas Sq and Dundas St.	Daytime Impacts	50	106	16	95	96.6%	3.4%	1.7%	1.7%
Yonge_N3	Yonge St., Walton St. to Gerrard St.	Daytime Impacts	50	133	16	120	96.6%	3.4%	1.7%	1.7%
Yonge_N4	Yonge St., Gerrard to N of College St.	Daytime Impacts	50	446	16	401	96.6%	3.4%	1.7%	1.7%
Yonge_S1	Yonge St., N of College St to Gerrard St.	Daytime Impacts	50	242	16	218	96.6%	3.4%	1.7%	1.7%
Yonge_S2	Yonge St., Elm St. EB and Edward St. WB	Daytime Impacts	50	1,333	16	1,200	96.6%	3.4%	1.7%	1.7%
Yonge_S3	Yonge St., Shuter St. to S of Queen St.	Daytime Impacts	50	1,204	16	1,084	96.6%	3.4%	1.7%	1.7%
Queen_E1	Queen St., West of Yonge St.	Daytime Impacts	50	5,381	16	4,843	97.9%	2.1%	1.1%	1.1%
Queen_E2	Queen St., East of Yonge St.	Daytime Impacts	50	5,908	16	5,317	97.9%	2.1%	1.1%	1.1%
Queen_W1	Queen St., West of Yonge St.	Daytime Impacts	50	6,944	16	6,250	97.9%	2.1%	1.1%	1.1%
Queen_W2	Queen St., East of Yonge St.	Daytime Impacts	50	5,813	16	5,232	97.9%	2.1%	1.1%	1.1%
Shuter_E1	Shuter St., East of Yonge St.	Daytime Impacts	50	2,117	16	1,905	98.8%	1.2%	0.6%	0.6%
Shuter_W1	Shuter St., East of Yonge St.	Daytime Impacts	50	3,258	16	2,932	98.3%	1.7%	0.9%	0.9%
Dundas_E1	Dundas St., West of Yonge St.	Daytime Impacts	50	5,613	16	5,052	98.2%	1.8%	0.9%	0.9%
Dundas_E2	Dundas St., East of Yonge St.	Daytime Impacts	50	5,060	16	4,554	98.2%	1.8%	0.9%	0.9%
Dundas_W1	Dundas St., West of Yonge St.	Daytime Impacts	50	8,004	16	7,204	98.2%	1.8%	0.9%	0.9%
Dundas_W2	Dundas St., East of Yonge St.	Daytime Impacts	50	6,987	16	6,288	98.2%	1.8%	0.9%	0.9%
Gould_E1	Gould St., Yonge St. to O'Keefe Ln.	Daytime Impacts	50	1,317	16	1,185	91.7%	8.3%	4.1%	4.1%
Gould_W1	Gould St., O'Keefe Ln. to Yonge St.	Daytime Impacts	50	117	16	105	91.7%	8.3%	4.1%	4.1%
Gerrard_E1	Gerrard St.,West of Yonge St.	Daytime Impacts	50	3,722	16	3,350	96.2%	3.8%	1.9%	1.9%
Gerrard_E2	Gerrard St., East of Yonge St.	Daytime Impacts	50	4,842	16	4,358	96.2%	3.8%	1.9%	1.9%
Gerrard_W1	Gerrard St., East of Yonge St.	Daytime Impacts	50	4,161	16	3,745	96.2%	3.8%	1.9%	1.9%

Road Traffic Data for Yonge Street Queen Street to College Street

Road Segment ID	Roadway Name	Link Description	Speed (km/h)	AADT	Period (h)	Total Traffic Volumes Day 90%	Auto %	Truck %	Med %	Hvy %
Gerrard_W2	Gerrard St.,West of Yonge St.	Daytime Impacts	50	4,271	16	3,844	96.2%	3.8%	1.9%	1.9%
College_E1	College St., West of Yonge St.	Daytime Impacts	50	3,825	16	3,443	96.8%	3.2%	1.6%	1.6%
Carlton_E1	Carlton St., East of Yonge St.	Daytime Impacts	50	4,769	16	4,292	96.8%	3.2%	1.6%	1.6%
Carlton_W1	Carlton St., East of Yonge St.	Daytime Impacts	50	5,386	16	4,847	96.8%	3.2%	1.6%	1.6%
College_W1	College St., West of Yonge St.	Daytime Impacts	50	6,092	16	5,483	96.8%	3.2%	1.6%	1.6%
Bay_N1	Bay St., South of Queen St. to Dundas St.	Daytime Impacts	50	5,644	16	5,080	95.5%	4.5%	2.3%	2.3%
Bay_N2	Bay St., Dundas St. to Edward St.	Daytime Impacts	50	5,929	16	5,336	95.5%	4.5%	2.3%	2.3%
Bay_N3	Bay St., Edward St. to Elm St.	Daytime Impacts	50	6,550	16	5,895	95.5%	4.5%	2.3%	2.3%
Bay_N4	Bay St., Elm St. to Gerrard St.	Daytime Impacts	50	7,725	16	6,953	95.5%	4.5%	2.3%	2.3%
Bay_N5	Bay St., Gerrard St. to N. of College St	Daytime Impacts	50	6,827	16	6,144	95.5%	4.5%	2.3%	2.3%
Bay_S1	Bay St., North of College St. to Gerrard St.	Daytime Impacts	50	4,539	16	4,085	95.5%	4.5%	2.3%	2.3%
Bay_S2	Bay St., Gerrard St. to Elm St.	Daytime Impacts	50	4,317	16	3,885	95.5%	4.5%	2.3%	2.3%
Bay_S3	Bay St., Elm St. to Edward St.	Daytime Impacts	50	3,933	16	3,540	95.5%	4.5%	2.3%	2.3%
Bay_S4	Bay St., Edward St. to Dundas St.	Daytime Impacts	50	3,939	16	3,545	95.5%	4.5%	2.3%	2.3%
Bay_S5	Bay St., Dundas St. to South of Queen St.	Daytime Impacts	50	4,283	16	3,855	95.5%	4.5%	2.3%	2.3%
Church_N1	Church St., South of Queen St. to Shuter St.	Daytime Impacts	50	4,263	16	3,837	96.9%	3.1%	1.6%	1.6%
Church_N2	Church St., Shuter St. to Dundas St.	Daytime Impacts	50	4,629	16	4,166	96.9%	3.1%	1.6%	1.6%
Church_N3	Church St., Dundas St. to Gould St.	Daytime Impacts	50	4,325	16	3,893	96.9%	3.1%	1.6%	1.6%
Church_N4	Church St., Gould St. to Gerrard St.	Daytime Impacts	50	4,683	16	4,215	96.9%	3.1%	1.6%	1.6%
Church_N5	Church St., Gerrard to North of College St.	Daytime Impacts	50	5,461	16	4,915	96.9%	3.1%	1.6%	1.6%
Church_S1	Church St., North of College St. to Gerrard St.	Daytime Impacts	50	4,344	16	3,910	96.9%	3.1%	1.6%	1.6%
Church_S2	Church St., Gerrard St. to Gould St.	Daytime Impacts	50	4,625	16	4,163	96.9%	3.1%	1.6%	1.6%
Church_S3	Church St., Gould St. to Dundas St.	Daytime Impacts	50	5,000	16	4,500	96.9%	3.1%	1.6%	1.6%
Church_S4	Church St., Dundas St. to Shuter St.	Daytime Impacts	50	4,567	16	4,110	96.9%	3.1%	1.6%	1.6%
Church_S5	Church St., Shuter St. to South of Queen St.	Daytime Impacts	50	4,229	16	3,806	96.9%	3.1%	1.6%	1.6%

APPENDIX D - Noise Prediction Input Information

Environmental Noise Assessment – Yonge Street from Queen Street to Carlton/College Street

City of Toronto

SLR Project No: 241.16362.A0000

Ontario Road Noise Analysis Method for Environment and Transportation

Road Segment ID	Roadway Name	Link Description	Speed (km/h)	AADT	Period (h)	Total Traffic Volumes Day 90%	Auto %	Truck %	Med %	Hvy %	Auto	Med	Heavy	Road Gradient (%)	Cadna/A Ground Absorption G	PWL (dBA)	Source Height, s (m)
	2041 No Build																
Yonge_N1	Yonge St., South of Queen St. to Shuter St.	Daytime Impacts	50	3,854	16	3,469	96.6%	3.4%	1.7%	1.7%	3,349	60	60	0	0.00	**74.1**	**1.1**
Yonge_N2	Yonge St., Shuter St. to Dundas St.	Daytime Impacts	50	3,381	16	3,043	96.6%	3.4%	1.7%	1.7%	2,938	52	52	0	0.00	**73.6**	**1.1**
Yonge_N3	Yonge St., Dundas St. to Gould St.	Daytime Impacts	50	3,529	16	3,176	96.6%	3.4%	1.7%	1.7%	3,067	55	55	0	0.00	**73.8**	**1.1**
Yonge_N4	Yonge St., Gould St. to Gerrard St.	Daytime Impacts	50	3,917	16	3,525	96.6%	3.4%	1.7%	1.7%	3,404	61	61	0	0.00	**74.2**	**1.1**
Yonge_N5	Yonge St., Gerrard to N of College St.	Daytime Impacts	50	3,058	16	2,752	96.6%	3.4%	1.7%	1.7%	2,658	47	47	0	0.00	**73.1**	**1.1**
Yonge_S1	Yonge St., N of College St to Gerrard St.	Daytime Impacts	50	3,058	16	2,752	96.6%	3.4%	1.7%	1.7%	2,658	47	47	0	0.00	**73.1**	**1.1**
Yonge_S2	Yonge St., Gerrard St. to Gould St.	Daytime Impacts	50	1,855	16	1,669	96.6%	3.4%	1.7%	1.7%	1,612	29	29	0	0.00	**71.0**	**1.1**
Yonge_S3	Yonge St., Gould St. to Dundas St.	Daytime Impacts	50	2,250	16	2,025	96.6%	3.4%	1.7%	1.7%	1,955	35	35	0	0.00	**71.8**	**1.1**
Yonge_S4	Yonge St., Dundas St. to Shuter St.	Daytime Impacts	50	2,008	16	1,807	96.6%	3.4%	1.7%	1.7%	1,745	31	31	0	0.00	**71.3**	**1.1**
Yonge_S5	Yonge St., Shuter St. to South of Queen St.	Daytime Impacts	50	1,317	16	1,185	96.6%	3.4%	1.7%	1.7%	1,145	20	20	0	0.00	**69.5**	**1.1**
Queen_E1	Queen St., West of Yonge St.	Daytime Impacts	50	5,342	16	4,808	97.9%	2.1%	1.1%	1.1%	4,705	51	51	0	0.00	**74.5**	**1.0**
Queen_E2	Queen St., East of Yonge St.	Daytime Impacts	50	5,558	16	5,002	97.9%	2.1%	1.1%	1.1%	4,896	53	53	0	0.00	**74.7**	**1.0**
Queen_W1	Queen St., West of Yonge St.	Daytime Impacts	50	6,190	16	5,571	97.9%	2.1%	1.1%	1.1%	5,452	59	59	0	0.00	**75.1**	**1.0**
Queen_W2	Queen St., East of Yonge St.	Daytime Impacts	50	7,017	16	6,315	97.9%	2.1%	1.1%	1.1%	6,181	67	67	0	0.00	**75.7**	**1.0**
Shuter_E1	Shuter St., East of Yonge St.	Daytime Impacts	50	2,382	16	2,144	98.8%	1.2%	0.6%	0.6%	2,119	13	13	0	0.00	**70.0**	**0.9**
Shuter_W1	Shuter St., East of Yonge St.	Daytime Impacts	50	3,160	16	2,844	98.3%	1.7%	0.9%	0.9%	2,795	24	24	0	0.00	**71.8**	**1.0**
Dundas_E1	Dundas St., West of Yonge St.	Daytime Impacts	50	5,129	16	4,616	98.2%	1.8%	0.9%	0.9%	4,531	42	42	0	0.00	**74.1**	**1.0**
Dundas_E2	Dundas St., East of Yonge St.	Daytime Impacts	50	5,268	16	4,741	98.2%	1.8%	0.9%	0.9%	4,654	44	44	0	0.00	**74.2**	**1.0**
Dundas_W2	Dundas St., West of Yonge St.	Daytime Impacts	50	6,710	16	6,039	98.2%	1.8%	0.9%	0.9%	5,928	56	56	0	0.00	**75.2**	**1.0**
Dundas_W1	Dundas St., East of Yonge St.	Daytime Impacts	50	6,567	16	5,910	98.2%	1.8%	0.9%	0.9%	5,802	54	54	0	0.00	**75.1**	**1.0**
Gould_E1	Gould St., Yonge St. to O'Keefe Ln.	Daytime Impacts	50	633	16	570	91.7%	8.3%	4.1%	4.1%	523	24	24	0	0.00	**68.8**	**1.4**
Gould_W1	Gould St., O'Keefe Ln. to Yonge St.	Daytime Impacts	50	133	16	120	91.7%	8.3%	4.1%	4.1%	110	5	5	0	0.00	**62.1**	**1.4**
Gerrard_E1	Gerrard St.,West of Yonge St.	Daytime Impacts	50	3,878	16	3,490	96.2%	3.8%	1.9%	1.9%	3,357	67	67	0	0.00	**74.4**	**1.2**
Gerrard_E2	Gerrard St., East of Yonge St.	Daytime Impacts	50	4,400	16	3,960	96.2%	3.8%	1.9%	1.9%	3,809	76	76	0	0.00	**75.0**	**1.2**
Gerrard_W1	Gerrard St., East of Yonge St.	Daytime Impacts	50	4,463	16	4,017	96.2%	3.8%	1.9%	1.9%	3,863	77	77	0	0.00	**75.0**	**1.2**
Gerrard_W2	Gerrard St.,West of Yonge St.	Daytime Impacts	50	3,946	16	3,551	96.2%	3.8%	1.9%	1.9%	3,416	68	68	0	0.00	**74.5**	**1.2**
College_E1	College St., West of Yonge St.	Daytime Impacts	50	4,625	16	4,163	96.8%	3.2%	1.6%	1.6%	4,028	67	67	0	0.00	**74.8**	**1.1**
Carlton_E1	Carlton St., East of Yonge St.	Daytime Impacts	50	4,897	16	4,407	96.8%	3.2%	1.6%	1.6%	4,265	71	71	0	0.00	**75.0**	**1.1**
Carlton_W1	Carlton St., East of Yonge St.	Daytime Impacts	50	5,925	16	5,333	96.8%	3.2%	1.6%	1.6%	5,161	86	86	0	0.00	**75.8**	**1.1**
College_W1	College St., West of Yonge St.	Daytime Impacts	50	6,400	16	5,760	96.8%	3.2%	1.6%	1.6%	5,575	93	93	0	0.00	**76.2**	**1.1**
Bay_N1	Bay St., South of Queen St. to Dundas St.	Daytime Impacts	50	4,857	16	4,371	95.5%	4.5%	2.3%	2.3%	4,175	98	98	0	0.00	**75.8**	**1.2**
Bay_N2	Bay St., Dundas St. to Gerrard St.	Daytime Impacts	50	6,030	16	5,427	95.5%	4.5%	2.3%	2.3%	5,183	122	122	0	0.00	**76.8**	**1.2**
Bay_N3	Bay St., Gerrard to College St.	Daytime Impacts	50	6,764	16	6,088	95.5%	4.5%	2.3%	2.3%	5,814	137	137	0	0.00	**77.3**	**1.2**
Bay_N4	Bay St., College St. to Alexander St.	Daytime Impacts	50	6,764	16	6,088	95.5%	4.5%	2.3%	2.3%	5,814	137	137	0	0.00	**77.3**	**1.2**
Bay_S1	Bay St., Alexander St. to College St.	Daytime Impacts	50	4,667	16	4,200	95.5%	4.5%	2.3%	2.3%	4,011	95	95	0	0.00	**75.7**	**1.2**
Bay_S2	Bay St., College St to Gerrard St.	Daytime Impacts	50	4,667	16	4,200	95.5%	4.5%	2.3%	2.3%	4,011	95	95	0	0.00	**75.7**	**1.2**
Bay_S3	Bay St., Gerrard St. to Dundas St.	Daytime Impacts	50	4,341	16	3,907	95.5%	4.5%	2.3%	2.3%	3,731	88	88	0	0.00	**75.4**	**1.2**
Bay_S4	Bay St., Dundas St. to South of Queen St.	Daytime Impacts	50	4,026	16	3,623	95.5%	4.5%	2.3%	2.3%	3,460	82	82	0	0.00	**75.0**	**1.2**
Church_N1	Church St., South of Queen St. to Shuter St.	Daytime Impacts	50	2,942	16	2,648	96.9%	3.1%	1.6%	1.6%	2,565	42	42	0	0.00	**72.7**	**1.1**
Church_N2	Church St., Shuter St. to Dundas St.	Daytime Impacts	50	2,533	16	2,280	96.9%	3.1%	1.6%	1.6%	2,208	36	36	0	0.00	**72.1**	**1.1**
Church_N3	Church St., Dundas St. to Gould St.	Daytime Impacts	50	3,583	16	3,225	96.9%	3.1%	1.6%	1.6%	3,123	51	51	0	0.00	**73.6**	**1.1**
Church_N4	Church St., Gould St. to Gerrard St.	Daytime Impacts	50	3,933	16	3,540	96.9%	3.1%	1.6%	1.6%	3,429	56	56	0	0.00	**74.0**	**1.1**
Church_N5	Church St., Gerrard to North of College St.	Daytime Impacts	50	5,378	16	4,840	96.9%	3.1%	1.6%	1.6%	4,688	76	76	0	0.00	**75.4**	**1.1**
Church_S1	Church St., North of College St. to Gerrard St.	Daytime Impacts	50	4,325	16	3,893	96.9%	3.1%	1.6%	1.6%	3,770	61	61	0	0.00	**74.4**	**1.1**
Church_S2	Church St., Gerrard St. to Gould St.	Daytime Impacts	50	4,171	16	3,753	96.9%	3.1%	1.6%	1.6%	3,636	59	59	0	0.00	**74.3**	**1.1**
Church_S3	Church St., Gould St. to Dundas St.	Daytime Impacts	50	4,075	16	3,668	96.9%	3.1%	1.6%	1.6%	3,552	58	58	0	0.00	**74.2**	**1.1**
Church_S4	Church St., Dundas St. to Shuter St.	Daytime Impacts	50	3,642	16	3,278	96.9%	3.1%	1.6%	1.6%	3,175	51	51	0	0.00	**73.7**	**1.1**
Church_S5	Church St., Shuter St. to South of Queen St.	Daytime Impacts	50	3,471	16	3,124	96.9%	3.1%	1.6%	1.6%	3,026	49	49	0	0.00	**73.5**	**1.1**

Ontario Road Noise Analysis Method for Environment and Transportation

Road Segment ID	Roadway Name	Link Description	Speed (km/h)	AADT	Period (h)	Total Traffic Volumes Day 90%	Auto %	Truck %	Med %	Hvy %	Auto	Med	Heavy	Road Gradient (%)	Cadna/A Ground Absorption G	PWL (dBA)	Source Height, s (m)
2041 Build																	
Yonge_N1	Yonge St., South of Queen St. to Shuter St.	Daytime Impacts	50	2,050	16	1,845	96.6%	3.4%	1.7%	1.7%	1,782	32	32	0	0.00	**71.4**	**1.1**
Yonge_N2	Yonge St., Shuter St. to Dundas Sq and Dundas St	Daytime Impacts	50	106	16	95	96.6%	3.4%	1.7%	1.7%	92	2	2	0	0.00	**58.5**	**1.1**
Yonge_N3	Yonge St., Walton St. to Gerrard St.	Daytime Impacts	50	133	16	120	96.6%	3.4%	1.7%	1.7%	116	2	2	0	0.00	**59.5**	**1.1**
Yonge_N4	Yonge St., Gerrard to N of College St.	Daytime Impacts	50	446	16	401	96.6%	3.4%	1.7%	1.7%	388	7	7	0	0.00	**64.8**	**1.1**
Yonge_S1	Yonge St., N of College St to Gerrard St.	Daytime Impacts	50	242	16	218	96.6%	3.4%	1.7%	1.7%	210	4	4	0	0.00	**62.1**	**1.1**
Yonge_S2	Yonge St., Elm St. EB and Edward St. WB	Daytime Impacts	50	1,333	16	1,200	96.6%	3.4%	1.7%	1.7%	1,158	21	21	0	0.00	**69.5**	**1.1**
Yonge_S3	Yonge St., Shuter St. to S of Queen St.	Daytime Impacts	50	1,204	16	1,084	96.6%	3.4%	1.7%	1.7%	1,046	19	19	0	0.00	**69.1**	**1.1**
Queen_E1	Queen St., West of Yonge St.	Daytime Impacts	50	5,381	16	4,843	97.9%	2.1%	1.1%	1.1%	4,740	52	52	0	0.00	**74.5**	**1.0**
Queen_E2	Queen St., East of Yonge St.	Daytime Impacts	50	5,908	16	5,317	97.9%	2.1%	1.1%	1.1%	5,204	57	57	0	0.00	**74.9**	**1.0**
Queen_W1	Queen St., West of Yonge St.	Daytime Impacts	50	6,944	16	6,250	97.9%	2.1%	1.1%	1.1%	6,116	67	67	0	0.00	**75.6**	**1.0**
Queen_W2	Queen St., East of Yonge St.	Daytime Impacts	50	5,813	16	5,232	97.9%	2.1%	1.1%	1.1%	5,120	56	56	0	0.00	**74.9**	**1.0**
Shuter_E1	Shuter St., East of Yonge St.	Daytime Impacts	50	2,117	16	1,905	98.8%	1.2%	0.6%	0.6%	1,883	11	11	0	0.00	**69.5**	**0.9**
Shuter_W1	Shuter St., East of Yonge St.	Daytime Impacts	50	3,258	16	2,932	98.3%	1.7%	0.9%	0.9%	2,882	25	25	0	0.00	**72.0**	**1.0**
Dundas_E1	Dundas St., West of Yonge St.	Daytime Impacts	50	5,613	16	5,052	98.2%	1.8%	0.9%	0.9%	4,959	46	46	0	0.00	**74.4**	**1.0**
Dundas_E2	Dundas St., East of Yonge St.	Daytime Impacts	50	5,060	16	4,554	98.2%	1.8%	0.9%	0.9%	4,470	42	42	0	0.00	**74.0**	**1.0**
Dundas_W1	Dundas St., West of Yonge St.	Daytime Impacts	50	8,004	16	7,204	98.2%	1.8%	0.9%	0.9%	7,071	66	66	0	0.00	**76.0**	**1.0**
Dundas_W2	Dundas St., East of Yonge St.	Daytime Impacts	50	6,987	16	6,288	98.2%	1.8%	0.9%	0.9%	6,173	58	58	0	0.00	**75.4**	**1.0**
Gould_E1	Gould St., Yonge St. to O'Keefe Ln.	Daytime Impacts	50	1,317	16	1,185	91.7%	8.3%	4.1%	4.1%	1,087	49	49	0	0.00	**72.0**	**1.4**
Gould_W1	Gould St., O'Keefe Ln. to Yonge St.	Daytime Impacts	50	117	16	105	91.7%	8.3%	4.1%	4.1%	97	4	4	0	0.00	**61.5**	**1.4**
Gerrard_E1	Gerrard St.,West of Yonge St.	Daytime Impacts	50	3,722	16	3,350	96.2%	3.8%	1.9%	1.9%	3,222	64	64	0	0.00	**74.2**	**1.2**
Gerrard_E2	Gerrard St., East of Yonge St.	Daytime Impacts	50	4,842	16	4,358	96.2%	3.8%	1.9%	1.9%	4,191	83	83	0	0.00	**75.4**	**1.2**
Gerrard_W1	Gerrard St., East of Yonge St.	Daytime Impacts	50	4,161	16	3,745	96.2%	3.8%	1.9%	1.9%	3,602	72	72	0	0.00	**74.7**	**1.2**
Gerrard_W2	Gerrard St.,West of Yonge St.	Daytime Impacts	50	4,271	16	3,844	96.2%	3.8%	1.9%	1.9%	3,697	73	73	0	0.00	**74.8**	**1.2**
College_E1	College St., West of Yonge St.	Daytime Impacts	50	3,825	16	3,443	96.8%	3.2%	1.6%	1.6%	3,332	55	55	0	0.00	**73.9**	**1.1**
Carlton_E1	Carlton St., East of Yonge St.	Daytime Impacts	50	4,769	16	4,292	96.8%	3.2%	1.6%	1.6%	4,154	69	69	0	0.00	**74.9**	**1.1**
Carlton_W1	Carlton St., East of Yonge St.	Daytime Impacts	50	5,386	16	4,847	96.8%	3.2%	1.6%	1.6%	4,691	78	78	0	0.00	**75.4**	**1.1**
College_W1	College St., West of Yonge St.	Daytime Impacts	50	6,092	16	5,483	96.8%	3.2%	1.6%	1.6%	5,306	88	88	0	0.00	**76.0**	**1.1**
Bay_N1	Bay St., South of Queen St. to Dundas St.	Daytime Impacts	50	5,644	16	5,080	95.5%	4.5%	2.3%	2.3%	4,851	114	114	0	0.00	**76.5**	**1.2**
Bay_N2	Bay St., Dundas St. to Edward St.	Daytime Impacts	50	5,929	16	5,336	95.5%	4.5%	2.3%	2.3%	5,096	120	120	0	0.00	**76.7**	**1.2**
Bay_N3	Bay St., Edward St. to Elm St.	Daytime Impacts	50	6,550	16	5,895	95.5%	4.5%	2.3%	2.3%	5,630	133	133	0	0.00	**77.1**	**1.2**
Bay_N4	Bay St., Elm St. to Gerrard St.	Daytime Impacts	50	7,725	16	6,953	95.5%	4.5%	2.3%	2.3%	6,640	156	156	0	0.00	**77.9**	**1.2**
Bay_N5	Bay St., Gerrard St. to N. of College St	Daytime Impacts	50	6,827	16	6,144	95.5%	4.5%	2.3%	2.3%	5,868	138	138	0	0.00	**77.3**	**1.2**
Bay_S1	Bay St., North of College St. to Gerrard St.	Daytime Impacts	50	4,539	16	4,085	95.5%	4.5%	2.3%	2.3%	3,901	92	92	0	0.00	**75.5**	**1.2**
Bay_S2	Bay St., Gerrard St. to Elm St.	Daytime Impacts	50	4,317	16	3,885	95.5%	4.5%	2.3%	2.3%	3,710	87	87	0	0.00	**75.3**	**1.2**
Bay_S3	Bay St., Elm St. to Edward St.	Daytime Impacts	50	3,933	16	3,540	95.5%	4.5%	2.3%	2.3%	3,380	80	80	0	0.00	**74.9**	**1.2**
Bay_S4	Bay St., Edward St. to Dundas St.	Daytime Impacts	50	3,939	16	3,545	95.5%	4.5%	2.3%	2.3%	3,386	80	80	0	0.00	**74.9**	**1.2**
Bay_S5	Bay St., Dundas St. to South of Queen St.	Daytime Impacts	50	4,283	16	3,855	95.5%	4.5%	2.3%	2.3%	3,681	87	87	0	0.00	**75.3**	**1.2**
Church_N1	Church St., South of Queen St. to Shuter St.	Daytime Impacts	50	4,263	16	3,837	96.9%	3.1%	1.6%	1.6%	3,716	60	60	0	0.00	**74.4**	**1.1**
Church_N2	Church St., Shuter St. to Dundas St.	Daytime Impacts	50	4,629	16	4,166	96.9%	3.1%	1.6%	1.6%	4,035	65	65	0	0.00	**74.7**	**1.1**
Church_N3	Church St., Dundas St. to Gould St.	Daytime Impacts	50	4,325	16	3,893	96.9%	3.1%	1.6%	1.6%	3,770	61	61	0	0.00	**74.4**	**1.1**
Church_N4	Church St., Gould St. to Gerrard St.	Daytime Impacts	50	4,683	16	4,215	96.9%	3.1%	1.6%	1.6%	4,082	66	66	0	0.00	**74.8**	**1.1**
Church_N5	Church St., Gerrard to North of College St.	Daytime Impacts	50	5,461	16	4,915	96.9%	3.1%	1.6%	1.6%	4,761	77	77	0	0.00	**75.4**	**1.1**
Church_S1	Church St., North of College St. to Gerrard St.	Daytime Impacts	50	4,344	16	3,910	96.9%	3.1%	1.6%	1.6%	3,787	61	61	0	0.00	**74.4**	**1.1**
Church_S2	Church St., Gerrard St. to Gould St.	Daytime Impacts	50	4,625	16	4,163	96.9%	3.1%	1.6%	1.6%	4,032	65	65	0	0.00	**74.7**	**1.1**
Church_S3	Church St., Gould St. to Dundas St.	Daytime Impacts	50	5,000	16	4,500	96.9%	3.1%	1.6%	1.6%	4,359	71	71	0	0.00	**75.0**	**1.1**
Church_S4	Church St., Dundas St. to Shuter St.	Daytime Impacts	50	4,567	16	4,110	96.9%	3.1%	1.6%	1.6%	3,981	65	65	0	0.00	**74.7**	**1.1**
Church_S5	Church St., Shuter St. to South of Queen St.	Daytime Impacts	50	4,229	16	3,806	96.9%	3.1%	1.6%	1.6%	3,687	60	60	0	0.00	**74.3**	**1.1**

APPENDIX E - Noise Bylaw

Environmental Noise Assessment – Yonge Street from Queen Street to Carlton/College Street

City of Toronto

SLR Project No: 241.16362.A0000

Authority: Economic and Community Development Committee Item EC3.6, adopted as amended, by City of Toronto Council on April 16 and 17, 2019

CITY OF TORONTO

BY-LAW 878-2019

To amend City of Toronto Municipal Code Chapter 591, Noise.

Whereas Council authorized amendments to Chapter 591, Noise on April 16 and 17, 2019; and

Whereas Chapter 591, Noise requires housekeeping updates to align the style and formatting of the chapter to the current Municipal Code standards;

The Council of the City of Toronto enacts:

1. City of Toronto Municipal Code Chapter 591, Noise, is amended by replacing Chapter 591 with the updated version attached as Schedule A to this by-law.

2. This by-law comes into force on October 1, 2019.

Enacted and passed on June 19, 2019.

Frances Nunziata,
Speaker

Ulli S. Watkiss,
City Clerk

(Seal of the City)

SCHEDULE A

Chapter 591

NOISE

ARTICLE 1
Definitions

ARTICLE 2
Prohibitions

ARTICLE 3
Exemptions

ARTICLE 4
Offences, Entry to Inspect, Orders, Remedial Action and Transition

§ 591-4.3. Orders to comply.

§ 591-4.4. Remedial action.

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ARTICLE 5
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§ 591-5.1. Definitions.

§ 591-5.2. Prohibited locations.

ARTICLE 1
Definitions

§ 591-1.1. Definitions.

As used in this chapter, the following terms shall have the meanings indicated:

AMBIENT SOUND LEVEL - The sound level that is present in the environment, produced by sound sources other than the source under assessment.

AMPLIFIED SOUND – Sound made by any electronic device or a group of connected electronic devices incorporating one or more loudspeakers or other electro mechanical transducers, and intended for the production, reproduction or amplification of sound.

CONSTRUCTION - Includes erection, alteration, repair, dismantling, demolition, structural maintenance, land clearing, earth-moving, grading, excavating, the laying of pipe and conduit whether above or below ground level, street and highway building, application of concrete, equipment installation and alteration and the structural installation of construction components and materials in any form or for any purpose, and includes any work in connection with these activities.

CONSTRUCTION EQUIPMENT - Any equipment or device designed and intended for use in construction, or material handling, including hand tools, power tools, air compressors, pile drivers, pneumatic or hydraulic tools, bulldozers, tractors, excavators, trenchers, cranes, derricks, loaders, scrapers, pavers, generators, off-highway haulers or trucks, ditchers, compactors and rollers, pumps, concrete mixers, graders, and any other material-handling equipment.

CONTINUOUS POURING OF CONCRETE – Slip-forming, deck pour or pre-pour operations that cannot be interrupted once the operations have started.

CONVEYANCE - Includes a vehicle and any other device employed to transport a person or persons or goods from place to place, but does not include any such device or vehicle if operated within the premises of a person.

dB(A) – The sound level in decibels obtained when using a sound level meter with the A-weighting.

dB(C) – The sound level in decibels obtained when using a sound level meter with the C-weighting.

EXECUTIVE DIRECTOR – The Executive Director of Municipal Licensing and Standards or their designate or successor.

GOVERNMENT WORK – Construction, rehabilitation or maintenance work conducted by the City, the Province of Ontario, the Government of Canada and any of its agencies or agents including the operation of motor vehicles and equipment actually engaged in the work.

HIGHWAY - includes a common and public highway, street, avenue, parkway, driveway, square, place, bridge, viaduct or trestle, any part of which is intended for or used by the general public for the passage of vehicles and includes the area between the lateral property lines of a highway.

LARGE CRANE WORK – The erection and dismantling of a crane or any other crane work that a road closure for the work to be started and finished.

Leq – The energy equivalent sound level or the continuous sound level that would result in the same total sound energy being produced over a given period of time.

LIVING AREA – Any area that includes the premises of a dwelling or a workplace.

MOTORCYCLE - Means a self-propelled vehicle having a seat or saddle for the use of the driver and designed to travel on not more than three wheels in contact with the ground, and includes a motor scooter, but does not include a motor assisted bicycle.

MOTOR VEHICLE - Includes an automobile, a motorcycle, a motor assisted bicycle and any other vehicle propelled or driven otherwise than by muscular power, but does not include a street car or other motor vehicle running only upon rails, a power-assisted bicycle, a motorized snow vehicle, a traction engine, a farm tractor, a self-propelled implement of husbandry or a road-building machine.

NOISE – A sound that a person finds disturbing to their peace, rest, enjoyment, comfort or convenience.

NOISE MITIGATION PLAN – A plan as required and approved by the Executive Director that addresses the mitigation of sound not in compliance with the requirements of this chapter from planned events or activities.

PERSISTENT NOISE – Any noise that is continuously heard for a period of ten minutes or more or intermittently over a period of one hour or more.

PLACE OF WORSHIP - A building dedicated to religious worship, including a church, synagogue, temple, mosque, monastery or convent.

POINT OF RECEPTION - Any location on the premises of a person where sound originating from other than those premises is received. The following locations are points of reception:

(1) An outdoor area that is:

(a) near the façade of a building, at a height of 1.5 metres above ground, typically in backyards, front yards, terraces or patios; or

(b) on a balcony or elevated terrace (for example, a rooftop) provided is not enclosed; or

(2) An indoor area that is inside a building with windows and doors closed.

POWER DEVICE - Any equipment driven otherwise than by muscular power used in the servicing, maintenance or repair of lawns, including chainsaws, lawn mowers, leaf blowers, grass trimmers or any other similar equipment. A power device does not include equipment used to remove snow or ice.

PROPERTY - A building or structure or part of a building or structure, including the lands appurtenant thereto and all mobile homes, mobile buildings or mobile structures and vacant land.

SOUND LEVEL METER - An instrument that measures levels of sound as approved for use by the Executive Director.

STATIONARY SOURCE - A source of sound which does not normally move from place to place, including the premises of a person as one stationary source, unless the dominant source of sound on those premises is construction or a conveyance.

UNREASONABLE NOISE – Any noise that would disturb the peace, rest, enjoyment, comfort or convenience of a reasonable person in the circumstances. Unreasonable noise does not include commonplace household or workplace sounds such as sound from furniture being moved, children playing or people engaging in conversation.

ARTICLE 2
Prohibitions

§ 591-2.1. Amplified sound.

A. No person shall emit or cause or permit the emission of continuous amplified sound, measured with a sound level meter at a point of reception in an outdoor living area:

(1) That has a sound level (expressed in terms of Leq for a ten-minute period) exceeding 50 dB(A) or 65 dB(C) from 11 p.m. to 7 a.m. or 55 dB(A) or 70 dB(C) from 7 a.m. to 11 p.m.; or

(2) Where the ambient sound level at a point of reception exceeds the maximum sound level permitted under Subsection A(1), that has a sound level (expressed in

terms of Leq for a ten-minute period) equal to or exceeding the ambient sound level.

B. If, during the course of an investigation, a By-law Enforcement Officer determines it is not reasonable to measure from a point of reception in an outdoor living area, then no person shall emit or cause or permit the emission of continuous amplified sound, measured with a sound level meter at a point of reception in an indoor living area:

(1) That has a sound level (expressed in terms of Leq for a ten-minute period), exceeding 45 dB(A) or 60 dB(C) from 11 p.m. to 7 a.m. or 50 dB(A) or 65 dB(C) from 7 a.m. to 11 p.m.; or

(2) Where the ambient sound level at a point of reception exceeds the maximum sound level permitted under Subsection B(1), that has a sound level (expressed in terms of Leq for a ten-minute period) equal to or exceeding the ambient sound level.

§ 591-2.2. Animals.

No person shall cause or permit persistent noise, including barking, calling or whining or other similar persistent noise, to be made by any animal kept or used for any purpose.

§ 591-2.3. Construction.

No person shall emit or cause or permit the emission of sound resulting from any operation of construction equipment or any construction that is clearly audible at a point of reception:

(1) from 7 p.m. to 7 a.m. the next day, except until 9 a.m. on Saturdays; and

(2) all day on Sundays and statutory holidays.

§ 591-2.4. Loading and unloading.

No person shall emit or cause or permit the emission of sound resulting from loading, unloading, delivering, packing, unpacking, and otherwise handling any containers, products or materials from 11 a.m. to 7 a.m. the next day, except until 9 a.m. on Saturdays, Sundays and statutory holidays.

§ 591-2.5. Motor vehicles.

A. No person shall emit or cause or permit the emission of sound resulting from unnecessary motor vehicle noise, such as the sounding of a horn, revving of an engine, squealing of tires, banging, clanking or any like sound that is clearly audible at a point of reception.

B. No person shall emit or cause or permit the emission of sound resulting from the repairing, rebuilding, modifying or testing of a vehicle if the sound is clearly audible at a point of reception from 9 p.m. until 7 a.m. the next day, except until 9 a.m. on Saturdays, Sundays and statutory holidays.

C. No person shall emit or cause or permit the emission of sound from a motorcycle, if the motorcycle emits any sound exceeding 92 dB(A) from the exhaust outlet as measured at 50 cm, while the motorcycle engine is at idle.

§ 591-2.6. Power devices.

A. No person shall emit or cause or permit the emission of sound from a power device from 7 p.m. until 7 a.m. the next day, except until 9 a.m. on Saturdays, Sundays and statutory holidays.

B. Subsection A does not apply to a power device used to maintain a golf course or public park.

§ 591-2.7. Religious ceremony in a place of worship.

No person shall make, cause or permit the emission of sound that disturbs a religious ceremony in a place of worship.

§ 591-2.8. Stationary sources and residential air conditioners.

A. No person shall cause or permit the emission of sound from a stationary source or residential air conditioner that, when measured with a sound level meter a point of reception, has a sound level (expressed in terms of Leq for a one-hour period) exceeding 50 dB(A) or the applicable sound level limit prescribed in provincial noise pollution control guidelines.

B. Subsection A does not apply to the emission of sound from a stationary source that is in compliance with a provincial environmental compliance approval.

§ 591-2.9. Unreasonable and persistent noise.

A. No person shall make, cause or permit noise, at any time, that is unreasonable noise and persistent noise.

B. Subsection A only applies to sound or noise that is not described in § 591-2.1 through § 591-2.8.

C. Despite Subsection B, an exemption permit may be required under § 591-3.2., at the discretion of the Executive Director, if the Executive Director determines that there is unreasonable and persistent noise during otherwise permitted hours as described in § 591-2.1 through § 591-2.8.

§ 591-2.10. Most restrictive provision applies.

Where a source of sound is subject to more than one provision of this article, the most restrictive provision applies.

ARTICLE 3
Exemptions

§ 591-3.1. Safety and government work.

Despite any other provision of this chapter, it shall be lawful to emit or cause or permit the emission of sound from:

A. Bells or sirens required for the purposes of public safety including sirens when operated by Police Services, Fire and Paramedic Services, or bells or whistles operated by rail or transit services;

B. Measures undertaken for the immediate health, safety or welfare of persons under emergency circumstances;

C. Measures undertaken as a result of an emergency requiring immediate action for the construction, preservation, restoration or demolition of any highway; or

D. Government work.

§ 591-3.2. Exemption permits.

A. Any person may apply for an exemption permit from a noise prohibition or noise limitation provision in this chapter, in connection with one or more events or activities, by filing with the Executive Director the following:

(1) An application in the form prescribed by the Executive Director;

(2) The non-refundable application fee set out in Chapter 441, Fees and Charges; and

(3) Any information relevant to the application as requested by and to the satisfaction of the Executive Director including:

(a) Reasons supporting an exemption permit;

(b) A noise mitigation plan;

(c) A statement certified by a professional engineer or acoustical consultant for any sounds that are not technically or operationally feasible to control.

B. Upon receipt of an application under Subsection A, the Executive Director shall give written notice to the Councillor of any ward where each event or activity is to be held and, where each event or activity is to be held on a boundary street between wards, to the Councillors of the adjoining wards.

C. The Executive Director shall issue an exemption permit if all of the following conditions have been met:

(1) All of the Councillors notified under Subsection B have either:

(a) Not responded within 14 days of the notice; or

(b) Responded indicating that they have no objection to the application being approved.

(2) The applicant has complied, to the satisfaction of the Executive Director, with the last exemption permit, if any, issued to them.

(3) The applicant has provided the following:

(a) The applicant's name, address, and telephone number;

(b) The date, time and location of each event or activity for which the exemption permit is sought and, where applicable, the number of people expected to attend;

(c) The purpose for which the exemption permit is required;

(d) The description of any sound equipment or construction equipment to be used;

(e) The name, address and telephone number of at least one contact person who will supervise each event or activity; and

(f) A written undertaking that one or more contact persons responsible for supervising each event or activity will be on-site during the entire event or activity to ensure compliance with the terms and conditions of the exemption permit.

(4) The applicant has paid all required fees.

D. An exemption permit shall be subject to the following conditions:

(1) A notice of the exemption permit shall be posted in a visible location where each event or activity will occur 7 days prior to the event or activity. This condition may be altered or waived by the Executive Director;

(2) If required by the Executive Director, the event or activity shall comply with a noise mitigation plan;

(3) If required by the Executive Director, the sound levels resulting from each event or activity shall be monitored by City staff with the applicant paying the charges for this monitoring as set out in Chapter 441, Fees and Charges;

(4) The sound emitted from any equipment shall not exceed a sound level (expressed in terms of Leq for a ten-minute period) of 85 dBA when measured 20 metres from the source;

(5) Where the sound level exceeds 85 dBA, the applicant shall comply with any request made by a police officer or a By-law Enforcement Officer with respect to the volume of sound from the equipment to ensure compliance with Subsection D(2);

(6) No sound equipment or construction equipment other than the equipment approved under the exemption permit shall be used by the applicant;

(7) Each event or activity shall be restricted to the approved location; and

(8) The permission granted shall be for the date and times for each event or activity as set out in the exemption permit.

E. Appeal.

(1) Where the Executive Director refuses to grant an exemption permit under this subsection, the applicant shall be notified in writing and advised that they may appeal the Executive Director's decision to the community council which has jurisdiction for the location of each proposed event or activity by filing an appeal within 21 days of the date of the notice, along with the applicable fee as set out in Chapter 441, Fees and Charges, with the City Clerk at the address shown on the notice.

(2) Notice of hearing shall be sent to all residents within 100 metres of the location where each event or activity is proposed to be held as shown on the last revised assessment rolls and at the applicant's expense.

(3) Where the location of each proposed event or activity under appeal falls on the boundary street of more than one community council, each affected community council shall provide its recommendations to Council for its consideration of the appeal under this Subsection.

(4) Council, or the community council under delegated authority, may issue or refuse an exemption permit.

(5) If the community council under delegated authority or Council issues an exemption permit, the exemption permit is subject to the conditions set out in Subsection D, unless the community council under delegated authority or Council provides otherwise, and to any other conditions respecting health, safety and nuisance as the community council under delegated authority or Council considers advisable.

F. Where an application for an exemption permit is made for continuous concrete pouring or large crane work, only Subsections A, B, C(2), (3) and (4), G and H apply and the

Executive Director may issue the exemption permit subject to the conditions in Subsections D(1), (2), (7) and the conditions that:

(a) The permission granted shall be for the date and times for each event or activity as set out in the exemption permit with overnight events or activities discouraged; and

(b) Notice for continuous concrete pouring and large crane work shall be distributed to those within a 120 metre radius of the activity at least 7 days prior to such event or activity.

G. Despite anything contained in § 591-3.2., where an application for an exemption permit is made by the City or any of its agencies, boards or commissions:

(1) The application shall be submitted directly to the Executive Director by the City department, agency, board or commission seeking the exemption permit.

(2) The fees in Chapter 441, Fees and Charges, do not apply.

(3) Subsections C(3)(e) and (f) do not apply.

H. The Executive Director may revoke an exemption permit, with or without notice, if there is non-compliance any of the exemption permit's conditions.

ARTICLE 4
Offences, Entry to Inspect, Orders, Remedial Action and Transition

§ 591-4.1. Offences.

A. Every person who contravenes any provision of this chapter is guilty of an offence and on conviction is liable to a fine of no more than $100,000.

B. Every person who fails to comply with an exemption permit issued or an order made under this chapter, is guilty of an offence and on conviction is liable to a fine of no more than $100,000.

C. In addition to a fine or fines provided for in this subsection every person who gains an economic advantage from contravening this chapter shall be liable to a special fine in an amount equal to the fair market value of the economic advantage obtained from the non-compliance.

D. In addition to offences referred to in Subsections A, B and C every person is guilty of an offence under this chapter who:

(1) Hinders or obstructs or attempts to hinder or obstruct any person exercising a power or performing a duty under this chapter;

(2) Neglects or refuses to produce or provide any information or thing to any person acting pursuant to an order made under section 378 of the City of Toronto Act, 2006;

(3) Knowingly makes, participates in, assents to or acquiesces in the provision of false information in a statement, affidavit, application or other document prepared, submitted or filed under this chapter.

E. Where a corporation contravenes any provision of this chapter, every director or officer who concurs in such contravention is guilty of an offence and on conviction is liable to a fine of no more than $100,000.

F. Where a corporation fails to comply with an exemption permit issued or an order made under this chapter, every director or officer who concurs in such non-contravention is guilty of an offence and on conviction is liable to a fine of no more than $100,000.

G. Each offence is designated as a continuing offence and is subject to, for each day or part of a day that the offence continues a maximum fine of no more than $10,000. The total of all of the daily fines imposed for each offence may exceed $100,000.

§ 591-4.2. Entry to inspect.

A. In accordance with section 376 of the City of Toronto Act, 2006, a By-Law Enforcement Officer may enter upon land within the City at any reasonable time for the purpose of carrying out inspections to determine whether the following are being complied with:

(1) This chapter; or

(2) A notice or order issued in accordance with this chapter.

B. For the purposes of an inspection under Subsection A, a By-law Enforcement Officer may:

(1) Require, for inspection, the production of documents or things relevant to the inspection;

(2) Inspect and remove documents or things relevant to the inspection for the purpose of making copies or extracts of them;

(3) Require information from any person concerning a matter related to the inspection;

(4) Be accompanied by such person or persons as the By-law Enforcement Officer determines is necessary if such person or persons possesses special or expert knowledge related to the purpose of the inspection; and

(5) Make examinations or take tests, samples or photographs necessary for the purposes of the inspection.

§ 591-4.3. Orders to comply.

A. A By-law Enforcement Officer who finds a contravention of this chapter may make one or more orders requiring discontinuance of the contravening activity or to do work to correct the contravention under section 384 or 385 of the City of Toronto Act, 2006.

B. The order may be served personally on the person to whom it is directed or by registered mail to the last known address of that person, in which case it shall be deemed to have been given on the third day after it is mailed.

C. If there is evidence that the occupant of the land is not the registered property owner, the notice shall be served on both the registered property owner and the occupant of the land.

D. If the address of the registered property owner is unknown, the City is unable to effect service on the registered property owner or occupant of the land under Subsection B or the delay necessary to give an order would result in circumstances that endanger the health or safety of any person or similarly serious consequences, a placard stating the terms of the order and placed in a conspicuous place upon land on or near the property shall be deemed to be sufficient notice to the registered property owner or the occupant of the land.

§ 591-4.4. Remedial action.

If a person fails to comply with an order to do work to correct a contravention under this chapter, the Executive Director, or persons acting upon their instructions, may enter the lands at any reasonable time for the purposes of doing the things described in the order at the person's expense.

§ 591-4.5. Transition.

A. The provisions of this chapter do not apply to exemption permits granted before October 1, 2019 provided that the holder of such permits continue to comply with the conditions of their original permits and that such permits are not revoked, terminated and do not expire.

B. All prosecutions and other enforcement processes commenced under this chapter which have not been completed on October 1, 2019 shall be completed as if the chapter had not been amended on that date.

ARTICLE 5
Railway Whistles

§ 591-5.1. Definitions.

As used in this article, the following abbreviations and terms shall have the meanings indicated:

CN - Canadian National Railway.

CP - Canadian Pacific Railway.

GO - Go Transit.

§ 591-5.2. Prohibited locations.

The use of the whistle on any railway equipment in respect of the highway crossings described in the following table is prohibited, except as otherwise provided in section 23.1 of the Railway Safety Act, R.S. 1985, c. 32 (4th Supp.):

No.	Railway	Subdivision, Branch or other Trackage	Mileage	Street Name
A.	Go	Uxbridge Subdivision	55.73	Sheppard Avenue East in the vicinity of the Agincourt Go Station
B.	Go	Uxbridge Subdivision	55.44	Marilyn Avenue in the vicinity of the Agincourt Go Station
C.	Go	Uxbridge Subdivision	60.19	Danforth Road west of Midland Avenue
D.	Go	Uxbridge Subdivision	59.96	Corvette Avenue pedestrian crossing mile 59.96 Uxbridge Subdivision