

J

Appendix J: Noise Assessment Report



REGIONAL ROAD 25 FROM SPEERS ROAD TO DERRY ROAD MCEA

HALTON REGION ONTARIO

ENVIRONMENTAL NOISE ASSESSMENT

RWDI # 2202891

May 7, 2026

SUBMITTED TO

Katherine Jim
Senior Project Manager
CIMA+
Katherine.Jim@cima.ca
M: 365.323.7468

SUBMITTED BY

Rahul Shah, P.Eng., MASC., M.Eng
Project Manager
Rahul.Shah@rwdi.com

Junchao Ma, BAsC
Noise and Vibration Scientist
Junchao.Ma@rwdi.com

RWDI
Consulting Engineers & Scientist
600 Southgate Drive,
Guelph, ON N1G 4P6
T: 519.823.1311
F: 519-823-1316



EXECUTIVE SUMMARY

CIMA+ retained RWDI to complete an environmental noise assessment for the proposed widening of Bronte Road (Regional Road 25) in Halton region, Ontario. This environmental noise assessment was done in support of a Municipal Class Environmental Assessment (MCEA) for the improvements on Regional Road 25. The study area includes the section of Regional Road 25 from Speers Road to Derry Road, which is approximately 16 kilometres long.

The objective of the study is to predict operational sound levels as it relates to the project. In addition, mitigation measures are to be assessed in the event of any predicted exceedance to the noise regulatory limits. Technical, economic, and administrative feasibility are assessed for any mitigation recommendations.

The results of the study show that the relative increase in future sound levels due to the undertaking is not significant, i.e. less than 5 dB, at all considered noise-sensitive receivers. Additionally, future ambient absolute sound levels with the undertaking are shown to be below 65 dBA. Thus, noise mitigation is not required based on the predicted noise level with the undertaking.

Noise levels from the project construction activities are assessed qualitatively. Construction sound is temporary in nature but is anticipated to be noticeable at times at existing noise sensitive areas in proximity to the construction activity. The construction noise levels have the potential to be an annoyance to noise sensitive areas within the study limits of this project. Methods to minimize construction noise impacts should be included in the Special Provisions, as outlined herein.



Table of Contents

1	Introduction.....	5
1.1	Project Description	5
2	Applicable Guidelines	6
2.1	Operation Noise Guidelines and Policies	6
2.2	Construction Noise Guidelines	7
2.2.1	Local Noise Control By-laws	7
2.2.2	MOE Model Municipal Noise Control By-law	7
3	Noise Sensitive Areas	7
3.1	Location of NSAs within the Area of Investigation.....	9
4	Operational Noise Impacts.....	9
4.1	Analysis.....	9
5	Construction Noise Impacts	10
5.1	Conceptual Noise Mitigation.....	11
6	Conclusions	11
7	Statement of Limitation	12
8	References	13

List of Tables

Table 1: Noise Level Criteria for Road Projects

Table 2: NPC-115 Maximum Noise Emission Levels for Typical Construction Equipment

Table 3: Predicted Road Traffic Sound Levels at Worst-Case NSAs and Comparison
with Sound Objectives of the MTO

List of Figures

Figure 1: Study Area Extent and Key Plan

Figure 2: Noise Sensitive Areas (NSA)



List of Appendices

Appendix A: Transportation Sound Basics

Appendix B: Town of Milton Noise Control By-Law
Town of Oakville Noise Control By-Law

Appendix C: Traffic Data



1 Introduction

CIMA+ retained RWDI to complete an environmental noise assessment for the proposed widening of Bronte Road (Regional Road 25) in Halton Region, Ontario. This environmental noise assessment is conducted in support of a Municipal Class Environmental Assessment (MCEA) for the improvements on Regional Road 25. The study area encompasses the section of Regional Road 25 from Speers Road to Derry Road, spanning approximately 16 kilometres long.

The primary objective of this assessment is to predict sound pressure levels associated with the project's operational noise emissions and to evaluate effective noise mitigation measures aimed at preventing or minimizing any potential exceedance of applicable regulatory noise limits. Additionally, a qualitative analysis of construction noise impacts is provided, along with best practices for its mitigation.

A plain language description of the terminology and relationships between everyday sounds to aid the non-technical reader is provided in **Appendix A**.

1.1 Project Description

The project encompasses the proposed widening of Regional Road 25 in Halton Region, Ontario. The study area includes the section of Regional Road 25 from Speers Road to Derry Road, which is approximately 16 kilometres long. The 2031 Build scenario includes the widening of the existing road from four to six lanes (see **Appendix C**). The preliminary preferred plan is as following:

- Maintain existing 4 lanes from Speers Road to Wyecroft Road
- Proposed widening from 4 to 6 lanes (3 lanes in each direction) from Wyecroft Road to Derry Road.
- Widening is generally equal on either side of centreline from Wyecroft Road to Louis St. Laurant Avenue.
- Widening to east from Louis St. Laurant Avenue to Derry Road.

The study area associated with the project has been selected in accordance with applicable guidelines. Noise sensitive areas have been identified within the study area. The noise sensitive areas expected to experience the highest impact from the project have been presented in detail.

2 Applicable Guidelines

A number of guidelines and documents related to assessing road traffic and construction noise impacts have been reviewed that are applicable to this project and are presented herein.

2.1 Operation Noise Guidelines and Policies

The Halton Region noise abatement guidelines for road project is detailed in the following document:

- Noise Abatement Guidelines – Regional Official Plan Guidelines (Halton Region, 2009).

The Ontario Ministry of Transportation (MTO) Noise criteria and policies for road projects are detailed in the following documents:

- Ontario MTO, Environmental Guide for Noise (MTO 2022, Version 2.0); and
- Ontario MTO, Environmental Reference for Highway Design (MTO 2013).

The noise criteria listed in the Halton region and MTO guidelines are based on the following two parameters:

- 1) Noise Level Difference between Future build and Future No-Build
- 2) Noise Level of Future Build

Table 1 lists the noise level criteria for road projects as per the Halton Region and MTO guidelines. The MTO Environmental Guide for Noise offers a widely accepted methodology for assessing noise impacts from roadways, which is more detailed than the Halton Region Guidelines. The Halton Region Guideline criteria are also part of the MTO guidelines. As such, the methodology and associated criteria outlines in the MTO Environmental Guide were used for this assessment. Wherever one of the noise criteria in **Table 1** is exceeded, noise mitigation measure is investigated. Mitigation measures must be technically, economically and administratively feasible, before it can be considered or proposed. The following is the general criteria of the technical, economic and administrative feasibilities:

- Technical feasibility: achieves a minimum of 5 dBA sound reduction for worst-impacted first-row receptors;
- Economic feasibility: reasonable cost per benefited receptor; and



- Administrative feasibility: within the municipality right-of-way without creating barriers between the residential lots and the streets.

2.2 Construction Noise Guidelines

2.2.1 Local Noise Control By-laws

Neither MTO nor Halton Region has established a noise criterion specific to construction noise. However, construction operations should abide by municipal noise control by-laws where practical. The proposed project lies within the Town of Milton and the Town of Oakville. The Town of Milton noise control requirements are detailed in By-Law 083-2021 (Town of Milton, 2021). The Town of Oakville noise control requirements are detailed in By-Law 2024-079 (Town of Oakville, 2024). The Noise By-Laws are included in Appendix B.

Milton's By-Law 083-2021 prohibits operation from construction equipment from 9:00 p.m. until 7:00 a.m. Moreover, the operation of any item of construction equipment in a quiet area is prohibited without effective muffling devices in good working order.

Oakville's By-Law 2024-079 prohibits operation from construction equipment from 7:00 p.m. until 7:00 a.m. and all days on Sundays and statutory holidays. The by-law indicates an exemption procedure for noise where an application has to be filed, and potential exemptions may be granted for up to six (6) months.

2.2.2 MOE Model Municipal Noise Control By-law

The Ministry of the Environment, Conservation and Parks (MECP, previously Ministry of the Environment, MOE) stipulates limits on sound levels 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 in MOE Publication NPC-115 "Construction Equipment", as noted in **Table 2** (MOE, 1977b) (presented after the report text).

3 Noise Sensitive Areas

A Noise Sensitive Area (NSA) is defined as the area where the sound objectives apply and should be considered when investigating the sound levels associated with the operational noise of a roadway. The NSAs are the areas that may eventually qualify to receive noise mitigation in the form of noise barriers if the sound levels exceeded the



applicable criteria and if the barriers are deemed technically, economically, and administratively feasible.

MTO guideline provides more comprehensive description of NSAs that captures all type of NSAs defined under and Halton Region Noise Abatement Guidelines. Under MTO Environmental Guide for Noise, version 2.0, Feb 2022, traditional NSAs include the following land uses, provided they have a ground level outdoor living area associated with them:

- Private homes (single family units and townhouses);
- Multiple unit buildings such as apartments, provided they have a communal outdoor living area associated with them; and
- Hospitals and nursing homes for the aged, provided they have an outdoor living area for use by patients.

For road widening assessments, special land use NSAs could be considered as a part of the community if they are next to a traditional NSA from the list mentioned above. A special land use NSA may only receive noise mitigation if the traditional NSA beside it has a technically, economically, and administratively feasible noise mitigation. Special land use NSAs include:

- Schools, educational facilities, and daycare centres where there are outdoor living areas for students;
- Campgrounds that provide overnight accommodation;
- Hotels and motels with outdoor communal outdoor living areas (e.g., swimming pools) for visitors;
- Community centres with outdoor living areas (e.g., outdoor sports courts);
- Municipal parks (excluding golf courses and trails); and
- Places of worship with outdoor living areas.

The following land uses are generally not considered by either the MTO or the MECP to qualify as NSAs:

- Apartment balconies;
- Cemeteries;
- All commercial; and
- All industrial.

3.1 Location of NSAs within the Area of Investigation

The area of investigation and road alignment are illustrated in **Figure 1**. Consistent with the Ontario Ministry of Transportation's (MTO) Environmental Guide for Noise, the maximum investigation area extends 600 meters perpendicularly from the pavement edge, defining the assessment boundaries. Halton Region Noise Abatement Guidelines does not specify the extent of the investigation area. Thus, the MTO Environmental Guide definition is followed.

Noise Sensitive Areas (NSAs) were identified through updated aerial photography, publicly available online information, a site visit, and consultation with the Halton Region Planning Department. For each segment under investigation, the nearest NSA to the pavement edge was identified. **Figure 2** depicts all identified NSAs closest to the roadway. The nearest NSA within the 600 m investigation area at each section is considered representative of the highest potential roadway noise impacts. It is important to note that sound levels typically decrease as the NSA setback from the road increases. Consequently, sound levels at other NSAs within the investigation area are anticipated to be lower due to increased distance and potential shielding effects.

NSAs were modeled at a height of 1.5 m above local grade to represent outdoor living areas, in accordance with MTO guidelines. Some identified NSAs represent up to three dwellings with similar acoustic environments and exposure to Regional Road 25.

Existing and planned noise barriers were also considered. Specifically, existing noise barriers observed during the site visit and a planned noise barrier at Modern Art Midrise Milton Midrise Block 41 were incorporated into the analysis. As a conservative measure, the shielding effects of buildings were not accounted for. The impact of terrain was determined to be negligible due to the predominantly flat topography between the roadway and the nearest NSAs.

4 Operational Noise Impacts

4.1 Analysis

Road traffic data based on peak PM traffic volumes were provided for all sections of Regional Road 25 within the study area by CIMA+. The same traffic was used for both the Future Build and Future No-Build (i.e. do nothing scenario) as the lane configurations would not affect the future traffic volumes. The provided future traffic data were for horizon year 2031. The raw traffic data included in **Appendix C**.



Truck percentage data for all sections of Regional Road 25 were also provided by CIMA+. A conservative heavy vehicle breakdown was adopted from MTO guidelines for major roadways as 5% medium trucks and 8% heavy trucks. Based on correspondence with CIMA+, transit buses were assumed to represent 3.5% of the total vehicles in the Future Build scenario. The same numbers of transit buses in each roadway segment were assumed for the Future No-Build scenario. All trucks are modelled at the non-HOV lanes.

The current posted speed limits identified from the street view maps range from 60 to 80 km/h, which was used for the Future No-Build assessment. The future posted speed provided by CIMA+ will be 60 km/h for the corridor, which was used for the Future Build assessment.

The implementation of the United States Federal Highway Administration Traffic Noise Model (TNM) version 2.5 (FHWA, 1998) by Cadna/A was used in the current assessment. The global 0.4 ground absorption coefficient is used, which is reflecting the mix of soft and hard ground between the road and the receptors. Future sound levels at the identified NSAs, with the undertaking, were predicted and summarized in **Table 3** in addition to the future no build sound levels. The future build sound levels did not exceed the absolute sound level criteria of 65 dBA at any receptors. The relative increase in the future sound levels as a result of the undertaking as compared with the no-build scenario did not trigger the 5 dBA criteria. Thus, noise mitigation is not considered at any of the receptors.

5 Construction Noise Impacts

Construction activities are temporary in nature, and largely unavoidable. With adequate controls, impacts can be minimized. However, for some periods of time and types of work, construction noise will be noticeable. Sound levels from construction at a given receptor location will also vary over time as different activities take place, and as those activities change location within the right-of-way.

Construction sound levels generally decrease as distance to the NSAs increases. The construction sound levels are function of the parallel operation of all the equipment along with the duty cycles and equipment distribution. Thus, the construction noise is temporary and will vary based on the activities that take place.

The closest NSA (R007) is approximately at setback distance of 10 m. Potential annoyance from construction noise levels at such close proximity is anticipated. This is also true for some other homes within the study limits of this project. A comparative chart of sound pressure levels and human perception to aid the reader is found in **Table**



3 of Appendix A. There are presently no receptor-based limits for roadway construction noise impacts. MOE NPC-115 should be followed, and actions are required if noise sensitive receptors file complaints. Conceptual noise mitigation measures have therefore been provided in the next section to minimize the potential for noise impacts.

5.1 Conceptual Noise Mitigation

Based on the anticipated construction sound levels, mitigation measures are provided below to minimize the potential for construction noise impacts. It is required that these be written into the contract documentation for the contractor.

- There should be explicit indication that Contractors are expected to comply with all applicable requirements of the contract and local noise by-laws. Enforcement of noise control by-laws is the responsibility of the Municipality for all work done by Contractors;
- 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 which is mandated by the City of Brantford noise control By-Law;
- Monitor and maintain haul routes to minimize movement over rough ground and potholes which in turn can generate noise;
- All equipment shall be kept in good working order as deterioration may increase equipment sound levels. A documented, regular inspection and maintenance program must be implemented;
- Vehicle on-site speed limits must be met and will be enforced;
- Idling vehicles will be kept to a minimum;
- In the presence of persistent noise complaints, all construction equipment should be verified to comply with MOE NPC-115 guidelines; and
- In the presence of persistent complaints and subject to the results of a field investigation, alternative noise control measures may be required, where reasonably available. In selecting appropriate noise control and mitigation measures, consideration should be given to the technical, administrative and economic feasibility of the various alternatives.

6 Conclusions

An environmental noise assessment for the proposed widening of Regional Road 25 in Halton Region, Ontario has been completed by RWDI.



The relative increase in the future sound levels as a result of the undertaking as compared with the no-built scenario is predicted to not exceed 5 dBA criterion, nor the absolute future sound levels any NSA exceed 65 dBA at any of the receptors. Thus, noise mitigation is not considered at any of the considered NSA.

Qualitative assessment of the construction noise is presented in the report. Construction noise is temporary in nature but anticipated to be noticeable at times at existing noise sensitive areas in proximity to the construction activities. Potential public annoyance from construction noise is anticipated within the study limits of this project. Methods to minimize construction noise impacts should be included in the Special Provisions, as outlined herein.

7 Statement of Limitation

This report entitled “Regional Road 25 From Speers Road to Derry Road MCEA”, dated May 07, 2026, was prepared by RWDI AIR Inc. (“RWDI”) for CIMA+ (“Client”). The findings and conclusions presented in this report have been prepared for the Client and are specific to the project described herein (“Project”). The conclusions and recommendations contained in this report are based on the information available to RWDI when this report was prepared. Because the contents of this report may not reflect the final design of the Project or subsequent changes made after the date of this report, RWDI recommends that it be retained by Client during the final stages of the project to verify that the results and recommendations provided in this report have been correctly interpreted in the final design of the Project.

The conclusions and recommendations contained in this report have also been made for the specific purpose(s) set out herein. Should the Client or any other third party utilize the report and/or implement the conclusions and recommendations contained therein for any other purpose or project without the involvement of RWDI, the Client or such third party assumes any and all risk of any and all consequences arising from such use and RWDI accepts no responsibility for any liability, loss, or damage of any kind suffered by Client or any other third party arising therefrom.

Finally, it is imperative that the Client and/or any party relying on the conclusions and recommendations in this report carefully review the stated assumptions contained herein and to understand the different factors which may impact the conclusions and recommendations provided.



8 References

- 1) Ontario Ministry of the Environment (MOE), 1977b, Model Municipal Noise Control Bylaw, which includes Publication NPC-115 – Construction Equipment
- 2) Ontario Ministry of Transportation (MTO), 2013, Environmental Reference for Highway Design.
- 3) Ontario Ministry of Transportation (MTO), 2022, Environmental Guide for Noise. Version 2.0.
- 4) The Corporation of the City of Brantford, 2021, By-Law 149-2021– Chapter 554: Noise Control.
- 5) The Corporation of the City of Brantford, 2024, Design and Construction Manual Linear Municipal Infrastructure Standards.
- 6) TNM - FHWA Federal Highway Administration Model (<http://www.trafficnoise-model.org>) TNM Version 2.5, McTrans Center University of Florida, 2088 Northeast Waldo Road, Gainesville, FL 32609, <http://mctrans.ce.ufl.edu>.
- 7) Halton Region, 2009, Noise Abatement Guidelines - Regional Official Plan Guidelines.