

Howe Gastmeier Chapnik Limited 2000 Argentia Road, Plaza One, Suite 203 Mississauga, Ontario, Canada L5N 1P7 t: 905.826.4044

# ENVIRONMENTAL NOISE ASSESSMENT MCLAUGHLIN ROAD WIDENING

# Mississauga, Ontario

Prepared for:

IBI Group 379 Queen Street South Kitchener, Ontario, N2G 1W6

Prepared by

Victor Garcia, EIT SHOPESSION 41 FL and 100100550 Ian Bonsma, PEng Sept 11/15 lept 1





NOISE



September 11, 2015

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## **1** INTRODUCTION AND SUMMARY

HGC Engineering was retained by IBI Group ("IBI") to conduct an assessment of the impact of traffic noise from the proposed widening of McLaughlin Road from Bristol Road West to Britannia Road West, in the City of Mississauga, Ontario.

The proposed upgrade will primarily consist of increasing the number of lanes from two to four for the project extents discussed above. Figure 1 shows the approximate extents of the road upgrading, while Figure 2 show the proposed future alignment. The analysis does not consider future upgrades to other nearby roadways.

The future sound levels are predicted to range from 53 to 57 dBA at representative outdoor living areas along McLaughlin Road due to existing traffic and normal growth (the "Do Nothing" scenario). Sound level predictions show that the road widening will not significantly increase the associated sound levels at the noise sensitive receptors (ie. less than 5 dBA difference and 60 dBA) with respect to the "Do Nothing" scenario. Ontario Ministry of Transportation ("MTO") and City of Mississauga guidelines indicate that in cases such as this, there is no requirement to consider noise mitigation features in the context of this project.

## 2 CRITERIA FOR ALLOWABLE SOUND LEVELS

McLaughlin Road is an important north-south route in the City of Mississauga, and the widening is being undertaken by the Corporation of the City of Mississauga. The MTO publishes guidelines for noise assessments for projects of this nature which are also recognized by the Ontario Ministry of Environment and Climate Change ("MOECC"). Guidelines for noise barriers are also provided by the City of Mississauga.

Where an existing roadway is proposed to be widened adjacent to a Noise Sensitive Area ("NSA"), sound levels are assessed based on: the MTO publication *Environmental Guide for Noise [1]*, which supports the technical noise requirements contained in the MTO Publication *Environmental Reference for Highway Design* [2]; and the City of Mississauga Corporate Policy and Procedure, Policy No. 09-03-03 *Noise Attenuation Barriers on Major Roadways [3]*. In addition, MTO





Publication *Noise Control and Mitigation* [4], provides guidance in dealing with issues of noise in Contract Preparation.

To emulate the response of the human ear, which is not equally sensitive to all frequencies, the loudness of sounds is typically rated using a frequency-weighted scale in units of *A-weighted decibels* [dBA]. A dBA sound level is a simple single number descriptor for comparing the overall loudness of sounds. Sound levels due to road traffic vary over time. As such an L<sub>EQ</sub> sound level descriptor is utilized. The L<sub>EQ</sub> is the *energy-equivalent sound level*, and represents the integrated (average) sound level of both steady and time-varying sounds. For arterial roadway noise, the L<sub>EQ</sub> is calculated over a 16 hour time period.

The MTO guidelines require a comparison between the future sound levels with the proposed construction or alteration in place and the future sound levels without the improvements. The term "future sound level" refers to sound levels 10 years after completion of the project. Where sound levels are predicted to be greater than 65 dBA or increase by more than 5 dBA, ten years after completion, an investigation of noise control measures within the roadway right-of-way should be completed. The Ciry of Mississauga guidelines require an investigation into noise control measures when sound levels are greater than 60 dBA ( $L_{EQ \ 16hr}$ )If required, the noise control measures should be designed to achieve sound levels as close to, or lower than, the Provincial objective of 55 dBA or the pre-construction ambient sound levels as is technically, economically or administratively feasible.

The guidelines recommend that sound level predictions be completed for all NSA's. Typical NSA's include the outdoor living areas of private residences, townhouses, multiple unit buildings and hospitals and nursing homes. The following are not considered as NSA's with respect to the MTO guidelines: apartment balconies, institutional uses such as schools and churches, cemeteries, daycare centers, and all commercial and industrial land uses.

## **3 CRITERIA FOR ALLOWABLE VIBRATION LEVELS**

Vibration limits for impulses in residential buildings is judged against the criteria presented in the MOECC Publication NPC-207 "Impulse Vibration in Residential Buildings". The physical quantity being assessed in NPC-207 is the Peak Vibration Velocity, which is measured in millimeters per second (mm/s).



The limits as per NPC-207 vary depending on whether the impulses occur frequently or infrequently. Frequent impulses are defined as 20 or more discrete impulses occurring in the observation period (not exceeding two hours). Infrequent impulses are defined as less than 20 discrete impulses occurring in the observation period of two hours. The NPC-207 limits only apply to the vertical vibrations of the floor being measured. Also, the Peak Vibration Velocity limits are divided into day time hours of 7:00 till 23:00 and night time hours of 23:00 till 7:00.

Vibration limits for infrequent impulses as per NPC-207 are 10.00 mm/s during day time hours and 0.30 mm/s for night time hours.

During the day time, the limits for frequent impulses vary with how frequent they are, however during night time hours the limit remains at 0.30 mm/s. The day time limit is 0.30 mm/s for 20 discrete impulses occurring in an observation period of 20 minutes or less, 0.60 mm/s for 20 discrete impulses in an observation period less than or equal to 1 hour but greater than 20 minutes, and 1.00 mm/s for 20 discrete impulses in an observation period which is more than an hour but less than or equal to 2 hours.

## 4 SITE MEASUREMENTS

HGC Engineering conducted a site visit on January 15 and March 19, 2013 to investigate the existing sound and vibration levels near McLaughlin Road. Sound level measurements were conducted using a Norsonic Nor140 Sound Analyser (SN 1403983). Vibration level measurements were conducted using Hewlett Packard 3569A real time frequency analyser (SN 3442A00141) equipped with a Wilcoxon Research type 793V velometer (SN 9883) as well as a Instantel Minimate Plus (SN BE18123) vibration monitor.

## 4.1 Existing Noise Control Measures

The approximate extents, heights and location of the barriers are shown on Figures 5 through 9. The barriers range in height from 1.8 m to 2.4 m and are generally in good condition, however there are some parts of the barriers north of Ceremonial Drive and north of Avonwick Avenue where the barrier is falling down.





### 4.2 Noise

The sound level measurements collected during HGC Engineering's site visit are summarized in Table 1. There are a number of existing acoustic barriers along McLaughlin Road. Sound level measurements were conducted on the McLaughlin Road side of the barrier. Sound level measurements were used to calibrate the noise model used for predictions.

Location	Prediction Location	Measured Sound Level (L <sub>eq(20min)</sub> ) dBA
McLaughlin Road/Faith Drive	1	64
5410 Champlain Trail	2	69
Edge of Langport Court	3	61
557 Ashprior Avenue	4	66

Table 1: Sound Level Measurement Summary

Photos of the existing acoustic barriers and several representative receptors are included in Appendix A.

## 4.3 Vibration

Vibration level measurements were conducted to determine the existing levels of ground borne vibration and to provide a comparison to the vibration criteria. Figure 3 shows representative vibration measurements from prediction location 2 near the proposed upgrading. The figure shows a time history of the vibration measurement where the peaks are caused by heavy truck or bus passbys. Table 2 identifies the locations where vibration measurements were conducted, the peak velocity (mm/s) for each location, and the NPC-207 perceptibility level (mm/s) for the nighttime.

ation Level N	leasurement	Summary
	ation Level N	ation Level Measurement

Prediction Location	Peak Velocity (mm/s)	NPC-207 Nighttime Limit (mm/s)	
1	0.2	0.3	below
2	0.5	0.3	above
3	0.1	0.3	below
4	0.2	0.3	below







The measurements indicate that moderate levels of vibration were recorded at various locations and at some locations may be perceptible inside the dwelling units depending on the building construction, floor spans etc. The ground borne vibrations were generally observed to be caused by the pass-bys of larger trucks or buses driving over imperfections in the road surface and storm drains. The conditions and makeup of the soil and bedrock may be a contributing factor to the amplification and/or propagation of ground borne vibration.

## 5 NOISE ANALYSIS METHODOLGY AND RESULTS

McLaughlin Road was modeled over the entire extent to be upgraded in both its existing and proposed configurations, using the computer program STAMSON (version 5.04). A preliminary plan drawing provided by IBI was used for horizontal roadway alignments and distance relationships between the roadway and adjacent residences. Northbound and southbound lanes were each modeled with half the total volume.

Seven representative receptor locations were chosen along the proposed widening (see figures 5 through 9). At each receptor location, sound level predictions were completed to assess the impact of the road upgrading. Receptor locations were chosen to be in the outdoor amenity space, which is typically 3 m from the rear wall of the dwelling, 1.2 m above the ground, in accordance with MTO Guidelines.

MTO procedures dictate that the traffic volumes used in the noise assessment be representative of a date ten years following the expected completion of the undertaking. This study utilizes the traffic and commercial vehicle percentages provided by IBI. To determine the traffic volumes 10 years following completion of the project (2026), the traffic data for McLaughlin Road was interpolated between annual average daily traffic ("AADT") volumes provided for the years 2011 and 2031. The traffic noise was assessed on a 16 hour basis (L<sub>EQ 16hour</sub>) according to MTO guidelines. Commercial vehicle splits medium and heavy were provided by IBI personnel for McLaughlin Road in Table 3. The current speed limit of 50 km/h on McLaughlin Road is assumed to be unchanged, as advised by IBI personnel. The traffic data used for the sound level predictions is summarized in Tables 4 and 5.





	McLaughlin Road S of Matheson	McLaughlin Road N of Matheson, S of Britannia	McLaughlin Road N of Britannia
Medium Trucks	1%	1.5%	2%
Heavy Trucks	1%	1.5%	2%
Total Commercial	2%	3%	4%

#### **Table 3: Commercial Vehicle Percentages**

#### Table 4: 2026 Predicted Road Traffic Data, McLaughlin Road "Do Nothing"

	McLaughlin Road South of Matheson	McLaughlin Road North of Matheson, South of Britannia	McLaughlin Road North of Britannia
2011 AADT	20 600	18 600	18 900
2026 AADT Total	23 525	21 900	22 275
Car	23 055	21 244	21 385
Medium Trucks	235	328	445
Heavy Trucks	235	328	445

#### Table 5: 2026 Predicted Road Traffic Data, McLaughlin Road Upgraded

	McLaughlin Road South of Matheson	McLaughlin Road North of Matheson, South of Britannia	McLaughlin Road North of Britannia
2011 AADT	20 600	18 600	18 900
2026 AADT Total	23 525	21 900	22 275
Car	23 055	21 244	21 385
Medium Trucks	235	328	445
Heavy Trucks	235	328	445

The L<sub>eq 16hour</sub> sound levels were predicted at the selected receptor locations based on the above information. The results are summarized in Table 6 with sample calculations provided in Appendix B.







		Changes to McI	Laughlin Road	Sound Level
Location	Location	No Improvements	Upgraded	Change
R1	5244 Parkwood Place	57	57	0
R2	5297 Parkwood Place	56	56	0
R3	5413 Champlain Trail	54	54	0
R4	505 Menton Court	57	57	0
R5	506 Avonwick Avenue	55	55	0
R6	529 Ashprior Avenue	54	54	0
R7	573 Ashprior Avenue	53	53	0

Table 6: Predicted 2026 Traffic Sound Levels Leg 16hour [dBA]

The sound level predictions indicate that future sound levels will be in the range of 53 to 57 dBA  $L_{eq \ 16hour}$  at the receptor locations near McLaughlin Road with the proposed road widening. These sound level predictions indicate no increases above the "Do Nothing" scenario and under MTO guidelines there is no requirement to investigate noise mitigation. Additionally, since the future sound levels both with and without the widening at all locations will not exceed 60 dBA, City of Mississauga guidelines indicate that there is no requirement to consider noise mitigation features in the context of this project.

## 6 CONSTRUCTION NOISE

Where an existing roadway is proposed to be widened, the related construction activities must be carried out in a manner to minimize noise and a process must be identified for dealing with public complaints, should they arise. The assessment is to be based on the MTO publication *Environmental Guide for Noise* [1], which supports the technical noise requirements contained in MTO Publication *Environmental Reference for Highway Design* [2]. In addition, MTO Publication *Noise Control and Mitigation* [4], provides guidance in dealing with issues of noise in Contract Preparation.

The expansion of McLaughlin Road is anticipated to occur using typical construction methods. Elevated sound levels may be present at nearby residential receptors when heavy machinery is operating in the area. Construction is expected to occur during weekday and Saturday daytime hours (07:00 - 19:00).





Sound levels due to construction vary over time depending upon equipment operational cycles and activities. The Maximum Sound Level ( $L_{max}$ ) descriptor is utilized to set a maximum sound emission level for such equipment operating in the vicinity of NSA's.

Construction activities are regulated in two ways in the Province of Ontario. Firstly, time restrictions are generally contained in Municipal Noise Bylaws. Secondly, the MOECC provides sound level limits for construction equipment in their Noise Pollution Control Guideline NPC-115 "Construction Equipment" [6] and NPC-118 "Motorized Conveyances" [7]. It is incumbent on the contractors to comply with these guidelines and ordinances.

NPC-115 and NPC-118 were developed by the MOECC to ensure that sound levels at typical residential locations near construction sites are maintained at a reasonable level, given the temporary nature of those activities. The guidelines are source specific, that is, they provide maximum sound emission limits for specific pieces of equipment measured at a distance of 15 m.

### 6.1 City of Mississauga Noise Bylaw

The City of Mississauga noise bylaw is included in Appendix C. It addresses construction in the following way.

There is a prohibition on operations between 7:00 pm and 7:00 am from Monday to Saturday, and on Sundays and statutory holidays given in Section 4 of the bylaw. This would apply to the residential lands surrounding McLaughlin Road. Currently no nighttime or evening work is proposed for the project.

A permit should be applied for from the City of Mississauga to obtain an exemption to the bylaw should work be conducted during evening or nighttime hours near residential areas. In order to apply for the permit (exemption) the process outlined in Section 7 of the noise bylaw should be followed.

## 6.2 Consideration of Potential Mitigation Measures

There are a number of measures which should be considered during the planning and design stages of the project which could potentially reduce noise due to construction activities. These are discussed below.







#### Storage Areas:

Storage areas may be able to be designated in locations removed from sensitive receptors. Where this is not possible, the storage of waste materials, earth, and other supplies could be positioned in a manner that will function as a noise barrier.

#### Specified Equipment:

Another effective noise mitigation technique involves use of the quietest practical type of equipment. Should persistent complaints occur, the contractor should consider the use of quieter equipment where such equipment is reasonably available.

## 6.3 Consideration of Potential Mitigation Measures

The project manager should respond promptly to all noise complaints. Should persistent noise complaints arise, an investigation should be conducted by a Professional Engineer qualified to provide Acoustical Engineering Services in the Province of Ontario. The investigation should involve measurements of the sound emissions from specific pieces of construction equipment to determine compliance with MOECC Guideline NPC-115 as per the contract requirements. Should excesses be identified, compliance should be required.

## 7 CONCLUSION AND RECOMMENDATIONS

HGC Engineering has completed a noise assessment of the proposed expansion of McLaughlin Road from Bristol Road West to Brittania Road West in the City of Mississauga. Sound level predictions were completed for the proposed roadway ten years after completion of the project (2026) and compared to the future predicted sound levels if the road remained the same.

The results of the predictions indicate that the proposed expansion of McLaughlin Road will not significantly increase the future sound levels at the sensitive receptors and that the future sound levels will be less than 60 dBA. There is no requirement to consider additional physical noise mitigation features in the context of this project.

The measured vibration levels at several receptor locations indicate that vibration levels from road traffic are not an issue. However, higher levels of vibration are caused by the passage of heavier





vehicles (buses and trucks) over imperfections in the road surface, storm drains and manhole covers at some locations. To minimize the future possibility of increased vibration levels, the road upgrading should ensure a smooth road surface with few imperfections.

The following recommendations are provided with regard to construction noise:

- 1. The contractor should be required to ensure that factory recommended mufflers are maintained on all construction equipment.
- 2. Sound emissions from all construction equipment should comply with MOECC Guideline NPC-115 "Sound Levels from Construction Equipment".
- 3. An exemption should be obtained from the City of Mississauga if nighttime work or work on Sunday's is required.
- 4. The project manager should respond promptly to noise or vibration complaints as indicated in Section 6.3 above.





## REFERENCES

- 1. Ontario Ministry of Transportation, Environmental Guide for Noise, Version: 1.1, 2006-10.
- 2. Ontario Ministry of Transportation, *Environmental Reference for Highway Design*, Version: 2, 2006-10.
- 3. City of Mississauga, Policy No. 09-03-03, *Noise Attenuation Barriers on Major Roadways*, 2011-04-13.
- 4. Ontario Ministry of Transportation, Noise Control and Mitigation, Revision A, 2007-02.
- Ontario Ministry of Transportation, *Environmental Office Manual*, Technical Area Noise EO-V-1000-00, 1992-5
- 6. Ontario Ministry of the Environment Publication NPC-115, Construction Equipment.
- 7. Ontario Ministry of the Environment Publication NPC-118, Motorized Conveyances.
- 8. Google Maps Aerial Imagery, Internet Application: maps.google.com







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## MCLAUGHLIN ROAD CLASS ENVIRONMENTAL ASSESSMENT STUDY (BETWEEN BRISTOL ROAD WEST AND BRITANNIA ROAD WEST) EXISTING CONDITIONS



Figure 2 - Extent of Mclaughlin Road Expansion



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Figure 4: Work Extents







Figure 5: Location of Receptor 1 & 2 and Prediction Location 1









Figure 6: Location of Receptor 3 and Prediction Location 2









Figure 7: Location of Receptor 4 and Prediction Location 3









Figure 8: Location of Receptor 5









Figure 9: Location of Receptor 6 & 7 and Prediction 4







# **APPENDIX A**

Photographs of nearest Noise Sensitive Areas and Existing Noise Barriers









Receptor Location 1





**P** 

NOISE







Barrier North of Ceremonial Drive











**Receptor Location 4** 





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NOISE



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Receptor Location 7



**9** 

NOISE





# **APPENDIX B**

Sample Calculations







1NO. TXT NORMAL REPORT Date: 10-09-2015 14:22:07 STAMSON 5.0 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT Filename: 1fola.te Time Period: 16 hours Description: Receptor location 1 - Do Nothing Road data, segment # 1: McLaughlin Car traffic volume : 10375 veh/TimePeriod 106 veh/TimePeriod 106 veh/TimePeriod \* Medium truck volume : \* Heavy truck volume : 50 km/h Posted speed limit Road gradient 2 % Road pavement : 1 (Typical asphalt or concrete) Data for Segment # 1: McLaughlin -90.00 deg 90.00 deg Angle1 Angle2 ٠ Wood depth 0 (No woods.) No of house rows 0 Surface 2 (Reflective ground surface) Receiver source distance : 25.50 m Receiver height 1.20 m (Flat/gentle slope; with barrier) Topography 2 : -90.00 deg Barrier angle1 Angl e2 : 90.00 deg Barrier height : 1.80 m Barrier receiver distance : 6.00 m Source elevation : 177.00 m : 177.00 m Receiver elevation Barrier elevation : 177.00 m 0.00 Reference angle Road data, segment # 2: McLaughlin \_\_\_\_\_ Car traffic volume : 10375 veh/TimePeriod 106 veh/TimePeriod 106 veh/TimePeriod Medium truck volume : \* Heavy truck volume : Posted speed limit 50 km/h Road gradient 2 % : 1 (Typical asphalt or concrete) Road pavement Data for Segment # 2: McLaughlin \_\_\_\_\_ Angle1 Angle2 : -90.00 deg 90.00 deg (No woods.) Wood depth 0 No of house rows 0 Surface 2 (Reflective ground surface) Receiver source distance : 28.50 m Receiver height 1.20 m (Flat/gentle slope; with barrier) Topography 2 Barrier angle1 : -90.00 deg Angl e2 : 90.00 deg Barrier height : Barrier receiver distance : : 1.80 m 6.00 m : 177.00 m Source elevation : 177.00 m Receiver elevation : 177.00 m Barrier elevation Reference angle 0.00 : Results segment # 1: McLaughlin Page 1

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1NO. TXT

Source height = 1.00 mBarrier height for grazing incidence Source ! Receiver ! Barrier ! Elevation of Height (m) ! Height (m) ! Height (m) ! Barrier Top (m) 1.00! 1.20! 1.15! 178.15 ROAD (0.00 + 54.15 + 0.00) = 54.15 dBAAngle1 Angle2 Alpha RefLeq P. Adj D. Adj F. Adj W. Adj H. Adj B. Adj SubLeq \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ -90 90 0.00 62.75 0.00 -2.30 0.00 0.00 0.00 -6.30 54.15 \_\_\_\_\_ Segment Leg : 54.15 dBA Results segment # 2: McLaughlin -----Source height = 1.00 mBarrier height for grazing incidence Source ! Receiver ! Barrier ! Elevation of Height (m) ! Height (m) ! Height (m) ! Barrier Top (m) \_ \_ \_ \_ \_ \_ \_ 1.00! 1.20! 1.16! 178.16 ROAD (0.00 + 53.71 + 0.00) = 53.71 dBAAngle1 Angle2 Alpha RefLeq P. Adj D. Adj F. Adj W. Adj H. Adj B. Adj SubLeq \_\_\_\_\_ -90 90 0.00 62.75 0.00 -2.79 0.00 0.00 0.00 -6.25 53.71 \_\_\_\_\_ Segment Leg : 53.71 dBA Total Leq All Segments: 56.95 dBA Ŷ TOTAL Leg FROM ALL SOURCES: 56.95 4

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1D0. TXT NORMAL REPORT Date: 10-09-2015 14:26:52 STAMSON 5.0 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT Filename: 1faola.te Time Period: 16 hours Description: Receptor Locatino 1 - Upgraded Road data, segment # 1: McLaughlin Car traffic volume : 10375 veh/TimePeriod 106 veh/TimePeriod 106 veh/TimePeriod \* Medium truck volume : \* Heavy truck volume : 50 km/h Posted speed limit Road gradient 2 % Road pavement : 1 (Typical asphalt or concrete) Data for Segment # 1: McLaughlin -90.00 deg 90.00 deg Angle1 Angle2 ٠ Wood depth 0 (No woods.) No of house rows 0 2 (Reflective ground surface) Surface Receiver source distance : 24.00 m Receiver height 1.20 m (Flat/gentle slope; with barrier) Topography 2 : -90.00 deg Barrier angle1 Angl e2 : 90.00 deg Barrier height : 1.80 m Barrier receiver distance : 6.00 m Source elevation : 177.00 m : 177.00 m Receiver elevation Barrier elevation : 177.00 m 0.00 Reference angle Road data, segment # 2: McLaughlin \_\_\_\_\_ Car traffic volume : 10375 veh/TimePeriod 106 veh/TimePeriod 106 veh/TimePeriod Medium truck volume : \* Heavy truck volume : Posted speed limit 50 km/h Road gradient 2 % 1 (Typical asphalt or concrete) Road pavement Data for Segment # 2: McLaughlin Angle1 Angle2 : -90.00 deg 90.00 deg (No woods.) Wood depth 0 No of house rows 0 Surface 2 (Reflective ground surface) Receiver source distance : 30.00 m Receiver height 1.20 m (Flat/gentle slope; with barrier) Topography 2 Barrier angle1 : -90.00 deg Angl e2 : 90.00 deg Barrier height : Barrier receiver distance : : 1.80 m 6.00 m : 177.00 m Source elevation : 177.00 m Receiver elevation : 177.00 m Barrier elevation Reference angle 0.00 : Results segment # 1: McLaughlin Page 1

ACOUSTICS



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Source height = 1.00 mBarrier height for grazing incidence Source ! Receiver ! Barrier ! Elevation of Height (m) ! Height (m) ! Height (m) ! Barrier Top (m) 1.00! 1.20! 1.15! 178.15 ROAD (0.00 + 54.38 + 0.00) = 54.38 dBAAngle1 Angle2 Alpha RefLeq P. Adj D. Adj F. Adj W. Adj H. Adj B. Adj SubLeq \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ -----\_ \_ \_ \_ \_ -90 90 0.00 62.75 0.00 -2.04 0.00 0.00 0.00 -6.33 54.38 \_\_\_\_\_ Segment Leg : 54.38 dBA Results segment # 2: McLaughlin -----Source height = 1.00 mBarrier height for grazing incidence Source ! Receiver ! Barrier ! Elevation of Height (m) ! Height (m) ! Height (m) ! Barrier Top (m) 1.00! 1.20! 1.16! 178.16 ROAD (0.00 + 53.51 + 0.00) = 53.51 dBAAngle1 Angle2 Alpha RefLeq P. Adj D. Adj F. Adj W. Adj H. Adj B. Adj SubLeq -90 90 0.00 62.75 0.00 -3.01 0.00 0.00 0.00 -6.22 53.51 \_\_\_\_\_ Segment Leg : 53.51 dBA Total Leq AII Segments: 56.98 dBA Ŷ TOTAL Leg FROM ALL SOURCES: 56.98 4



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4NO. TXT NORMAL REPORT Date: 10-09-2015 14:27:52 STAMSON 5.0 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT Filename: 4fola.te Time Period: 16 hours Description: Receptor Location 4 - Do Nothing Road data, segment # 1: McLaughlin Car traffic volume : 10375 veh/TimePeriod 106 veh/TimePeriod 106 veh/TimePeriod \* Medium truck volume : \* Heavy truck volume : Posted speed limit 50 km/h Road gradient 0 % Road pavement : 1 (Typical asphalt or concrete) Data for Segment # 1: McLaughlin -90.00 deg 90.00 deg Angle1 Angle2 ٠ Wood depth 0 (No woods.) No of house rows 0 Surface 2 (Reflective ground surface) Receiver source distance : 18.50 m Receiver height 1.20 m (Flat/gentle slope; with barrier) Topography : -90.00 deg Barrier angle1 Angl e2 : 90.00 deg : 2.00 m Barrier height Barrier receiver distance : 6.00 m : 182.45 m Source elevation : 182.90 m Receiver elevation Barrier elevation : 182.90 m Reference angle 0.00 Road data, segment # 2: McLaughlin \_\_\_\_\_ Car traffic volume : 10375 veh/TimePeriod 106 veh/TimePeriod 106 veh/TimePeriod Medium truck volume : \* Heavy truck volume : Posted speed limit 50 km/h Road gradient 0 % : 1 (Typical asphalt or concrete) Road pavement Data for Segment # 2: McLaughlin \_\_\_\_\_ Angle1 Angle2 : -90.00 deg 90.00 deg (No woods.) Wood depth 0 No of house rows 0 Surface 2 (Reflective ground surface) Receiver source distance : 21.50 m Receiver height 1.20 m (Flat/gentle slope; with barrier) Topography 2 Barrier angle1 : -90.00 deg Angl e2 : 90.00 deg Barrier height : Barrier receiver distance : 2.00 m 6.00 m : 182.45 m Source elevation : 182.90 m Receiver elevation : 182.90 m Barrier elevation Reference angle 0.00 : Results segment # 1: McLaughlin Page 1

ACOUSTICS



4NO. TXT

Source height = 1.00 mBarrier height for grazing incidence Source ! Receiver ! Barrier ! Elevation of Height (m) ! Height (m) ! Height (m) ! Barrier Top (m) 1.00 ! 1.20 ! 0.99 ! 183.89 ROAD (0.00 + 53.98 + 0.00) = 53.98 dBAAngle1 Angle2 Alpha RefLeq P. Adj D. Adj F. Adj W. Adj H. Adj B. Adj SubLeq \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_\_\_\_\_ \_ \_ \_ \_ \_ \_ \_ - - - - - -\_ \_ \_ \_ \_ -90 90 0.00 62.75 0.00 -0.91 0.00 0.00 0.00 -7.86 53.98 \_\_\_\_\_ Segment Leg : 53.98 dBA Results segment # 2: McLaughlin -----Source height = 1.00 mBarrier height for grazing incidence Source ! Receiver ! Barrier ! Elevation of Height (m) ! Height (m) ! Height (m) ! Barrier Top (m) \_ \_ \_ \_ \_ \_ \_ . 1.00! 1.20! 1.02! 183.92 ROAD (0.00 + 53.57 + 0.00) = 53.57 dBAAngle1 Angle2 Alpha RefLeq P. Adj D. Adj F. Adj W. Adj H. Adj B. Adj SubLeq -----\_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ -90 90 0.00 62.75 0.00 -1.56 0.00 0.00 0.00 -7.62 53.57 \_\_\_\_\_ Segment Leg : 53.57 dBA Total Leq AII Segments: 56.79 dBA Ŷ TOTAL Leg FROM ALL SOURCES: 56.79 4



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VIBRATION

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4D0. TXT NORMAL REPORT Date: 10-09-2015 14:28:34 STAMSON 5.0 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT Filename: 4faola.te Time Period: 16 hours Description: Receptor Location 4 - Upgraded Road data, segment # 1: McLaughlin Car traffic volume : 10375 veh/TimePeriod 106 veh/TimePeriod 106 veh/TimePeriod \* Medium truck volume : \* Heavy truck volume : Posted speed limit 50 km/h Road gradient 0 % Road pavement : 1 (Typical asphalt or concrete) Data for Segment # 1: McLaughlin -90.00 deg 90.00 deg Angle1 Angle2 ٠ Wood depth 0 (No woods.) No of house rows 0 Surface 2 (Reflective ground surface) Receiver source distance : 15.50 m Receiver height 1.20 m (Flat/gentle slope; with barrier) Topography Barrier angle1 : -90.00 deg Angl e2 : 90.00 deg : 2.00 m Barrier height Barrier receiver distance : 6.00 m : 182.45 m Source elevation : 182.90 m Receiver elevation Barrier elevation : 182.90 m Reference angle 0.00 Road data, segment # 2: McLaughlin Car traffic volume : 10375 veh/TimePeriod 106 veh/TimePeriod 106 veh/TimePeriod Medium truck volume : \* Heavy truck volume : Posted speed limit 50 km/h Road gradient 0 % : 1 (Typical asphalt or concrete) Road pavement Data for Segment # 2: McLaughlin Angle1 Angle2 : -90.00 deg 90.00 deg (No woods.) Wood depth 0 No of house rows 0 Surface 2 (Reflective ground surface) Receiver source distance : 24.50 m Receiver height 1.20 m (Flat/gentle slope; with barrier) Topography 2 Barrier angle1 : -90.00 deg Angl e2 : 90.00 deg Barrier height : Barrier receiver distance : 2.00 m 6.00 m : 182.45 m Source elevation : 182.90 m Receiver elevation : 182.90 m Barrier elevation Reference angle 0.00 : Results segment # 1: McLaughlin Page 1

ACOUSTICS



4D0. TXT

Source height = 1.00 mBarrier height for grazing incidence Source ! Receiver ! Barrier ! Elevation of Height (m) ! Height (m) ! Height (m) ! Barrier Top (m) 1.00! 1.20! 0.95! 183.85 ROAD (0.00 + 54.38 + 0.00) = 54.38 dBAAngle1 Angle2 Alpha RefLeq P. Adj D. Adj F. Adj W. Adj H. Adj B. Adj SubLeq \_ -90 90 0.00 62.75 0.00 -0.14 0.00 0.00 0.00 -8.22 54.38 \_\_\_\_\_ Segment Leg : 54.38 dBA Results segment # 2: McLaughlin -----Source height = 1.00 mBarrier height for grazing incidence Source ! Receiver ! Barrier ! Elevation of Height (m) ! Height (m) ! Height (m) ! Barrier Top (m) \_ \_ \_ \_ \_ \_ \_ . 1.00! 1.20! 1.04! 183.94 ROAD (0.00 + 53.17 + 0.00) = 53.17 dBAAngle1 Angle2 Alpha RefLeq P. Adj D. Adj F. Adj W. Adj H. Adj B. Adj SubLeq -------90 90 0.00 62.75 0.00 -2.13 0.00 0.00 0.00 -7.45 53.17 \_\_\_\_\_ Segment Leg : 53.17 dBA Total Leq AII Segments: 56.83 dBA Ŷ TOTAL Leg FROM ALL SOURCES: 56.83 4



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7NO. TXT NORMAL REPORT Date: 10-09-2015 14:29:21 STAMSON 5.0 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT Filename: 7fola.te Time Period: 16 hours Description: Receptor Location 7 - Do nothing Road data, segment # 1: McLaughlin Car traffic volume : 10375 veh/TimePeriod Medium truck volume : 212 veh/TimePeriod 0 veh/TimePeriod \* \* Heavy truck volume : 50 km/h Posted speed limit Road gradient 0 % Road pavement : 1 (Typical asphalt or concrete) Data for Segment # 1: McLaughlin -90.00 deg 90.00 deg Angle1 Angle2 ٠ Wood depth 0 (No woods.) No of house rows 0 2 (Reflective ground surface) Surface Receiver source distance 29.50 m Receiver height 1.20 m (Flat/gentle slope; with barrier) Topography 2 Barrier angle1 : -90.00 deg Angl e2 : 90.00 deg Barrier height Barrier receiver distance : 2.00 m 11.00 m Source el evation : 180.85 m : 182.10 m Receiver elevation Barrier elevation : 182.10 m Reference angle : 0.00 Road data, segment # 2: McLaughlin \_\_\_\_\_ Car traffic volume : 10375 veh/TimePeriod Medium truck volume : 212 veh/TimePeriod Heavy truck volume : 0 veh/TimePeriod \* Posted speed limit : 50 km/h Road gradient 0 % : 1 (Typical asphalt or concrete) Road pavement Data for Segment # 2: McLaughlin \_\_\_\_\_ Angle1 Angle2 : -90.00 deg 90.00 deg (No woods.) Wood depth 0 No of house rows 0 Surface 2 (Reflective ground surface) Receiver source distance : 32.50 m Receiver height 1.20 m (Flat/gentle slope; with barrier) Topography 2 Barrier angle1 : -90.00 deg Angl e2 : 90.00 deg Barrier height : Barrier receiver distance : 2.00 m : 11.00 m : 180.85 m Source elevation Receiver elevation : 182.10 m Barrier elevation : 182.10 m Reference angle 0.00 : Results segment # 1: McLaughlin Page 1

ACOUSTICS



7NO. TXT

Source height = 0.50 mBarrier height for grazing incidence Source ! Receiver ! Barrier ! Elevation of Height (m) ! Height (m) ! Height (m) ! Barrier Top (m) 0.50! 1.20! 0.47! 182.57 ROAD (0.00 + 49.94 + 0.00) = 49.94 dBAAngle1 Angle2 Alpha RefLeq P. Adj D. Adj F. Adj W. Adj H. Adj B. Adj SubLeq \_ -90 90 0.00 61.36 0.00 -2.94 0.00 0.00 0.00 -8.48 49.94 \_\_\_\_\_ Segment Leg: 49.94 dBA Results segment # 2: McLaughlin -----Source height = 0.50 mBarrier height for grazing incidence Source ! Receiver ! Barrier ! Elevation of Height (m) ! Height (m) ! Height (m) ! Barrier Top (m) 0.50! 1.20! 0.54! 182.64 ROAD (0.00 + 49.84 + 0.00) = 49.84 dBAAngle1 Angle2 Alpha RefLeq P. Adj D. Adj F. Adj W. Adj H. Adj B. Adj SubLeq ------90 90 0.00 61.36 0.00 -3.36 0.00 0.00 0.00 -8.17 49.84 \_\_\_\_\_ Segment Leg : 49.84 dBA Total Leq AII Segments: 52.90 dBA Ŷ TOTAL Leg FROM ALL SOURCES: 52.90 4



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7D0. TXT NORMAL REPORT Date: 10-09-2015 14: 30: 03 STAMSON 5.0 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT Filename: 7faola.te Time Period: 16 hours Description: Receptr location 7 - Upgraded Road data, segment # 1: McLaughlin Car traffic volume : 10375 veh/TimePeriod Medium truck volume : 212 veh/TimePeriod 0 veh/TimePeriod \* \* Heavy truck volume : 50 km/h Posted speed limit Road gradient 0 % Road pavement : 1 (Typical asphalt or concrete) Data for Segment # 1: McLaughlin -90.00 deg 90.00 deg Angle1 Angle2 ٠ Wood depth 0 (No woods.) No of house rows 0 2 (Reflective ground surface) Surface Receiver source distance 26.50 m Receiver height 1.20 m (Flat/gentle slope; with barrier) Topography 2 Barrier angle1 : -90.00 deg Angl e2 : 90.00 deg Barrier height Barrier receiver distance : 2.00 m 11.00 m Source el evation : 180.85 m : 182.10 m Receiver elevation Barrier elevation : 182.10 m Reference angle : 0.00 Road data, segment # 2: McLaughlin \_\_\_\_\_ Car traffic volume : 10375 veh/TimePeriod Car traffic volume10373 volumeMedium truck volume212 veh/TimePeriodHeavy truck volume0 veh/TimePeriod \* Posted speed limit 50 km/h Road gradient 0 % 1 (Typical asphalt or concrete) Road pavement Data for Segment # 2: McLaughlin \_\_\_\_\_ Angle1 Angle2 : -90.00 deg 90.00 deg (No woods.) Wood depth 0 No of house rows 0 Surface 2 (Reflective ground surface) Receiver source distance : 35.50 m Receiver height 1.20 m (Flat/gentle slope; with barrier) Topography 2 Barrier angle1 : -90.00 deg Angl e2 : 90.00 deg Barrier height : Barrier receiver distance : 2.00 m : 11.00 m : 180.85 m Source elevation Receiver elevation : 182.10 m Barrier elevation : 182.10 m Reference angle 0.00 : Results segment # 1: McLaughlin Page 1

ACOUSTICS



7D0. TXT

Source height = 0.50 mBarrier height for grazing incidence Source ! Receiver ! Barrier ! Elevation of Height (m) ! Height (m) ! Height (m) ! Barrier Top (m) 0.50! 1.20! 0.39! 182.49 ROAD (0.00 + 50.01 + 0.00) = 50.01 dBAAnglel Angle2 Alpha RefLéq P. Adj D. Adj F. Adj W. Adj H. Adj B. Adj SubLeq \_ -90 90 0.00 61.36 0.00 -2.47 0.00 0.00 0.00 -8.88 50.01 \_\_\_\_\_ Segment Leg : 50.01 dBA Results segment # 2: McLaughlin -----Source height = 0.50 mBarrier height for grazing incidence Source ! Receiver ! Barrier ! Elevation of Height (m) ! Height (m) ! Height (m) ! Barrier Top (m) 0.50! 1.20! 0.60! 182.70  $ROAD (0.00 + 49.70 + 0.00) = 49.70 \, dBA$ Angle1 Angle2 Alpha RefLeq P. Adj D. Adj F. Adj W. Adj H. Adj B. Adj SubLeq ------90 90 0.00 61.36 0.00 -3.74 0.00 0.00 0.00 -7.92 49.70 \_\_\_\_\_ Segment Leg : 49.70 dBA Total Leq AII Segments: 52.87 dBA Ŷ TOTAL Leg FROM ALL SOURCES: 52.87 4



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# APPENDIX C

City of Mississauga Noise Bylaw









(Amended by 77-85, 1298-86, 755-87, 62-92, 230-94, 303-00, 495-03, 124-05, 110-06, 92-07, 120-07, 127-07, 248-07, 73-08, 99-08, 299-08)

WHEREAS the Council of a local municipality is empowered under <u>The</u> <u>Environmental Protection Act</u>, 1971, as amended, to pass by-laws, subject to the approval of the Minister of the Environment, for regulating or prohibiting the emission of sounds or vibrations;

AND WHEREAS it is the policy of the Council to reduce and control unusual or unnecessary sounds or vibrations which may degrade the quality and tranquillity of the lives of the inhabitants of the City of Mississauga or cause nuisance.

NOW THEREFORE the Council of the Corporation of the City of Mississauga ENACTS as follows:

#### **INTERPRETATION**

1. In this by-law,

"City" means the City of Mississauga in the Regional Municipality of Peel

*"Commissioner"* means the Commissioner of Transportation and Works for the City or his or her designate; (299-08)

*"construction"* includes erection, alteration, repair, dismantling, demolition, structural maintenance, painting, moving, land clearing, earth moving, grading, excavating, the laying of pipe and conduit whether above or below ground level, street and highway building, concreting, 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 therewith;

*"construction equipment"* means any equipment or device designed and intended for use in construction or material handling, including but not limited to, 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 or other material handling equipment;

#### "Council" means the Council of the Corporation of the City of Mississauga;

"Minister" means the Minister of the Environment;

"Ministry" means the Ministry of the Environment;

*"motor vehicle"* includes an automobile, motorcycle, motor assisted bicycle unless otherwise indicated in <u>The Highway Traffic Act</u>, and any other vehicle propelled or driven otherwise than by muscular power, but does not include the cars of electric or steam railways, or other motor vehicles running only upon rails, or a motorized snow vehicle, traction engine, farm tractor, self-propelled implement of husbandry or road-building machine within the meaning of <u>The Highway Traffic Act</u>.

*"motorized 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 only within the premises of a person or if propelled or driven only by muscular, gravitational or wind power;

"noise" means unwanted sound;

*"Noise Control Officer"* means a person designated by the Commissioner for the City as a noise control officer; (By-law 755-87, 299-08)

*"point of reception"* means any point on the premises of a person where sound or vibration originating from other than those premises is received;

*"Quiet Zone"* means those areas of the City where quiet is of particular importance and as more particularly designated in Schedule 4 to this By-law.

*"Residential Area"* means any area containing dwellings which are normally used for human habitation.

#### **ADMINISTRATION**

2. The Commissioner shall be responsible for the administration and enforcement of this by-law. (By-law 755-87, 495-03, 299-08)

#### **GENERAL PROHIBITION**

3. No person shall emit or cause or permit the emission of sound resulting from an act listed in Schedule 1 to this by-law and which sound is clearly audible at a point of reception.

#### **PROHIBITION BY TIME AND PLACE**

4. No person shall emit or cause or permit the emission of sound resulting from any act listed in Column 1 to Schedule 2 to this by-law if clearly audible at a point of reception located in a residential area or quiet zone within a prohibited period of time for such an area as set out in Column 2 to Schedule 2 to this By-law.

#### PUBLIC SAFETY EXEMPTION

- 5. The provisions of Section 3 and 4 do not apply to the emission of a sound or vibration in connection with emergency measures undertaken:
  - (a) for the immediate health, safety or welfare of the inhabitants of the City or any of them; or
  - (b) for the preservation or restoration of property.

#### EXEMPTION OF TRADITIONAL FESTIVE OR RELIGIOUS ACTIVITIES

6. The provisions of Section 3 and 4 do not apply to the emission of sounds or vibrations made by persons in connection with any of the traditional, festive, religious or other activities set out in Schedule 3 to this by-law.

#### **GRANT OF EXEMPTION BY COUNCIL**

- 7. (1) Any person may apply for an exemption from the provisions of Sections 3 and 4 of this By-law, with respect to any source of sound or vibration. (299-08)
  - (2) An application for exemption under Subsection (1) shall be in writing and shall contain:
    - (a) the name and address of the applicant,
    - (b) a description of the source of sound or vibration in respect of which exemption is being sought,
    - (c) a statement of the section of the by-law from which exemption is sought,
    - (d) the period of time (not in excess of six (6) months) for which the exemption is sought,

- (e) the reasons why the exemption is being sought,
- (f) proof of publication for two consecutive days within the preceding ten (10) days in a newspaper of general circulation within the City, of a notice of intention to apply for any exemption to this by-law, received or by the distribution of a flyer as prescribed by the City to all residences within a 500 meter radius of the subject property containing the information required by Clauses (a) through (e) hereof, stating the date upon which objections may be submitted to City staff. (299-08)
- (g) the application fee. (299-08)
- (3) An application for an exemption completed in accordance with section 7(2) shall be delivered to the Commissioner. (299-08)
- (4) The Commissioner may grant an exemption, in whole or in part, with terms and conditions, subject to the provisions of this By-law. (299-08)
- (5) In considering the completed application for any exemption, the Commissioner shall take into account the following: (299-08)
  - (a) If an exemption is granted, a time limit shall be specified, and an exemption shall not exceed six months.
  - (b) The Commissioner shall consult with the affected Ward Councillor on an application for an exemption and the consultation shall include any terms and conditions that may be attached to an exemption.
  - (c) Any correspondence received regarding the application as a result of the distribution of the Notice or newspaper advertisement referred to in Section 7(2)(f).
  - (d) The proximity of the sound to a Residential Area and the likelihood that the sound for which an exemption is requested may negatively affect persons in a Residential Area.
  - (e) Whether any negative impacts under clauses (c) or (d) can be reduced with the use of mitigation measures including limiting the sound to certain days or times of the day.
- (6) A breach by the applicant of any of the terms or conditions imposed by the Commissioner in granting an exemption shall immediately render the exemption null and void. (299-08)

(7) Notwithstanding that the authority to grant an exemption is delegated to the Commissioner, and that he or she may have already exercised the delegated power, Council shall retain the right to exercise the authority to grant or deny an exemption in accordance with the conditions set out in section 7 (5) of this Bylaw. (299-08)

#### **SEVERABILITY**

8. If a court of competent jurisdiction declares any section or part of a section of this by-law invalid, such section or part of a section shall not be construed as having persuaded or influenced Council to pass the reminder of the by-law and it is hereby declared that the remainder of the by-law shall be valid and shall remain in force.

#### **PENALTY**

- 9. (1) Every person who contravenes any provision of this by-law is guilty of an offence. Pursuant to the provisions of the <u>Provincial Offences Act</u>, R. S. O. 1990, c.P. 33 upon conviction a person is liable to a fine of not more than \$5,000, exclusive of costs. (by-law 63-92)
  - (2) In addition to the provisions of Subsection (1), the Court in which the information is first laid and any court of competent jurisdiction thereafter, may issue an order prohibiting the contravention and repetition of the offence by the person convicted, and such order shall be in addition to any penalty imposed on the person convicted.
- 10. (1) By-law Number 7364 enacted by the former Town of Mississauga and any other by-law passed by the former Town of Mississauga to control noise is hereby repealed.
  - (2) By-law Number 957, enacted by the former Village of Port Credit and any other by-law passed by the former Village of Port Credit to control noise is hereby repealed.
  - (3) By-law Number 66-36, enacted by the former Town of Streetsville and any other by-law passed by the former Town of Streetsville to control noise is hereby repealed.
  - (4) By-law 2370 enacted by the former Township of Toronto and any other by-law passed by the former Township of Toronto to control noise is hereby repealed.

(5) Any Noise Control By-law, enacted by the Town of Oakville in that part of Oakville which was annexed by the City of Mississauga, and more particularly described in Section 2(1)(a) of <u>The Regional Municipality of Peel Act</u>, 1973, S.O. 1973, c. 60, is hereby repealed.

READ A FIRST AND SECOND TIME THIS 28<sup>TH</sup> DAY OF MAY, 1979. READ A THIRD TIME AND FINALLY PASSED THIS 28<sup>TH</sup> DAY OF JANUARY 1980. Signed by: <u>"Hazel McCallion", Mayor</u> <u>"Terence L. Julian", Clerk</u> This by-law is approved pursuant to the provisions of <u>The Environmental Protection Act</u>, 1971, as amended, at Toronto, this 9<sup>th</sup> day of April, 1980. Signed by: <u>"Harry Parrott", Minister of the Environment</u>

#### SCHEDULE 1 TO BY-LAW NUMBER 360-79 GENERAL PROHIBITIONS

- 1. The racing of any motorized conveyance other than in a racing event regulated by law.
- 2. The operation of a motor vehicle at a speed and in a manner which causes its tires to squeal.
- **3.** The operation of any combustion engine or pneumatic device without an effective exhaust or intake muffling device in good working order and in constant operation.
- 4. The operation of a vehicle or a vehicle with a trailer resulting in banging, clanking, squealing or other like sounds due to improperly secured load or equipment, or inadequate maintenance.
- 5. The operation of an engine or motor in, or on, any motor vehicle or item of attached auxiliary equipment for a continuous period exceeding five minutes, while such vehicle is stationary in a Residential Area or a Quiet Zone unless:
  - (a) the original equipment manufacturer specifically recommends a longer idling period for normal and efficient operation of the motor vehicle in which case such recommended period shall not be exceeded; or,
  - (b) operation of such engine or motor is essential to a basic function of the vehicle or equipment, including but not limited to, operation of ready-mixed concrete trucks, lift platforms and refuse compactors; or,
  - (c) weather conditions justify the use of heating or refrigerating systems powered by the motor or engine for the safety and welfare of the operator, passengers or animals, or the preservation of perishable cargo, and the vehicle is stationary for purposes of delivery or loading; or,
  - (d) prevailing low temperatures make longer idling periods necessary immediately after starting the motor or engine; or,
  - (e) the idling is for the purpose of cleaning and flushing the radiator and associated circulation system for seasonal change of antifreeze, cleaning of the fuel system, carburettor or the like, when such work is performed other than for profit.

#### SCHEDULE 1 TO BY-LAW NUMBER 360-79 GENERAL PROHIBITIONS

- 6. The operation of a motor vehicle horn or other warning device except when required or authorized by law or in accordance with good safety practices.
- 7. The operation of any item of construction equipment in a Quiet Zone or Residential Area without effective muffling devices in good working order and in constant operation.

#### SCHEDULE 2 TO BY-LAW NUMBER 360-79 PROHIBITED PERIODS OF TIME:

- A 23:00 hrs. of one day to 07:00 hrs. next day (09:00 hrs. Sundays)
- B 19:00 hrs. of one day to 07:00 hrs. next day (09:00 hrs. Sundays)
- C 17:00 hrs. of one day to 07:00 hrs. next day (09:00 hrs. Sundays)
- **D** All Day Sundays and Statutory Holidays
- E 17:00 hrs. of one day to 07:00 hrs. next day
- F 19:00 hrs. of one day to 07:00 hrs. next day

#### SCHEDULE 2 TO BY-LAW NUMBER 360-79 **PROHIBITED PERIODS OF TIME:**

## COLUMN 1

<u>COI</u>	<u>LUMN 1</u>	<u>COLUMN 2</u> PROHIBITED PERIOD OF TIME		
		<u>QUIET ZONE</u>	<u>RESIDENTIAL</u> <u>AREA</u>	
1.	The operation of any auditory signalling device, including but not limited to the ringing of bells or gongs and the blowing of horns or sirens or whistles, or the production, reproduction or amplification of any similar sounds by electronic means except where required or authorized by law or in accordance with good safety practices.	At Any Time	B & D	
2.	The operation of any electronic device or group of connected devices incorporating one or more loudspeakers or other electro- mechanical transducers, and intended for the production, reproduction or amplification of sound.	At Any Time	С	
3.	All selling or advertising by shouting or outcry or amplified sound.	At Any Time	B & D	
4.	Loading, unloading, delivering, packing, unpacking, or otherwise handling any containers, products, materials, or refuse, whatsoever, unless necessary for the maintenance of essential services or the moving of private household effects.	В	B & D	
5.	The operation of any construction equipment in connection with construction.	E & D	F & D	

#### SCHEDULE 2 TO BY-LAW NUMBER 360-79 **PROHIBITED PERIODS OF TIME:**

#### COLUMN 1

6.

<u>COLUMN 2</u> <u>PROHIBITED 3</u> <u>QUIET ZONE</u>	PERIOD OF TIME RESIDENTIAL
At Any Time	<u>AREA</u> A - unless otherwise
	permitted in accordance with the provisions of

By-law 160-74 or its successors

or

7

Canada Railway Act

The detonation of fireworks or explosive

cars, locomotives or self-propelled passenger cars, while stationary on property not owned or controlled by a railway governed by The

devices not used in construction.

7.	The c	discharge of firearms.	At Any Time	At Any time- unless in accordance with the provisions of By-law 331-77 or its successors.
8.	The ( (i) (ii) (iii)	operation of a combustion engine which is, or is used in, or is intended to be used in, a toy, or a model or replica of any device, which model or replica has no function other than amusement and which is not a conveyance.	At Any Time	Α
9.	The o inclu	operation of any powered rail car ding but not limited to refrigeration	At Any Time	Α

#### SCHEDULE 2 TO BY-LAW NUMBER 360-79 PROHIBITED PERIODS OF TIME:

### **COLUMN 1**

COL	<u>UMN 1</u>	COLUMN 2		
		<u>PROHIBITED P</u> <u>QUIET ZONE</u>	<u>RESIDENTIAL</u> <u>AREA</u>	
10.	The operation of any motorized conveyance other than on a highway or other place intended for its operation.	At Any Time	В	
11.	The venting, release or pressure relief of air, steam or other gaseous material, product or compound from any autoclave, boiler, pressure vessel, pipe, valve, machine, device or system.	At Any Time	Α	
12.	Persistent barking, calling or whining or other persistent noise making by any domestic pet.	At Any Time	At Any Time	
13.	The operation of any powered or nonpowered tool for domestic purposes other than snow removal.	Α	Α	
14.	The operation of solid waste bulk lift or refuse compacting equipment.	В	Α	
15.	The operation of a commercial car wash with air drying equipment.	В	В	
16.	Yelling, shouting, hooting, whistling or singing.	At Any Time	Α	

#### SCHEDULE 3 TO BY-LAW 360-79 ACTIVITIES TO WHICH THE BY-LAW DOES NOT APPLY

#### (amended by By-law 495-03, 124-05, 110-06, 92-07, 120-07, 127-07, 248-07, 73-08, 99-08)

<b>ACTIVITIES TO WHICH THE BY-</b>	LOCATION
LAW DOES NOT APPLY	
Airport Taxi Limousine Sports Tournament & Picnic	Wildwood Park
	3430 Derry Road West
Ashworth Square Co-operative Multicultural Day	Ashworth Square Co-operative Complex
	3180 Kirwin Avenue
BOT Construction Group construction of Mclaughlin	Mclaughlin Road at Highway 401
Road at Highway 401 between March 1, 2008 and	
December 31, 2008	
Can-Sikh Festival	Wildwood Park
	3430 Derry Road West
Canadian Cancer Society – Relay for Life	John Fraser Secondary School
	2665 Erin Centre Boulevard
Carolling in the Park	Port Credit Memorial Park
	22 Stavebank Road North
Celebrate the Season	Civic Square
	300 City Centre Drive
Desh Bhagat	Wildwood Park
	3430 Derry Road West
Fall Fair and Folk Festival	Bradley Museum
	1620 Orr Road
Graham Bros. Construction of Confederation Parkway	<b>Confederation Parkway from Rathburn</b>
from Rathburn Road West to the Hydro Corridor north	Road West to Hydro Corridor
of Highway 403 between July 5, 2007 and September 30,	
2000 Historia Hallowoon Fun	Banaras Musaum
	1507 Clarkson Road North
Kalayaan Festival	Mississanga Valley Park
ixuluyuuli i cotivui	1275 Mississauga Valley Boulevard
Meadow-Wood Rattray Ratenavers Picnic	Bradley Museum
ficuus ( ) oou futerug futepugers ficilie	1620 Orr Road
Ministry of Transportation of Ontario reconstruction of	<b>Oueen Elizabeth Way (OEW) between</b>
the median, a median barrier, and the installation of a	Mississauga Road and Winston Churchill
high mast lighting system on the Queen Elizabeth Way	Boulevard
(QEW) between September 1, 2007 to August 31, 2010	
Ministry of Transportation of Ontario construction	Queen Elizabeth Way (QEW) and
related to the Queen Elizabeth Way (QEW)/Hurontario	Hurontario Street Interchange
Street Interchange Improvements project between	
August 1, 2007 to November 30, 2009.	
Mississauga Canada Day Celebration	300 City Centre Drive
Mississauga Corporate Challenge	J.C. Saddington Park
	53 Lake Street

#### <u>SCHEDULE 3 TO BY-LAW 360-79</u> <u>ACTIVITIES TO WHICH THE BY-LAW DOES NOT APPLY</u>

Mississauga Marathon	Civic Square
	<b>300 City Centre Drive</b> ,
	Lakefront Promenade Park
	800 Lakefront Promenade
Mississauga Rotary Ribfest	Civic Square
	300 City Centre Drive
Mississauga Waterfront Festival	Port Credit Memorial Park
	22 Stavebank Road North
Mount Zion Apostolic Church Picnic	Wildwood Park
	3430 Derry Road West
My Mississauga	Civic Square
	300 City Centre Drive
On the Verandah Concert Series	Benares Museum
	1507 Clarkson Road North
Port Credit Paint the Town Red	Port Credit Memorial Park
	22 Stavebank Road North
Salmon Derby	J.C. Saddington Park
·	53 Lake Street
San Salvidor Del Mundo Festival	Fred Halliday Park
	2187 Stir Crescent
Shakespeare Under the Stars	Bradley Museum
1	1620 Orr Road
Sherwood Forrest Family Fun Day	Sherwood Green Park
e e	1864 Deer's Wold
Streetsville Canada Celebration	Streetsville Memorial Park
	335 Church Street
Streetsville Founders Bread & Honey Festival	Streetsville Memorial Park
	335 Church Street
Sunset Concert Series	Civic Square
	300 City Centre Drive.
	St. Lawrence Park
	141 Lakeshore Road East
Southside Shuffle	Port Credit Memorial Park
	22 Stavebank Road North
Teddy Bears' Picnic	Benares Museum
	1507 Clarkson Road North
University of Santos Thomas Alumni Annual Picnic	Mississauga Valley Park
	1275 Mississauga Valley Boulevard

#### <u>THE CORPORATION OF THE CITY OF MISSISSAUGA</u> <u>NOISE CONTROL BY-LAW 360-79</u> <u>SCHEDULE 4 TO BY-LAW NUMBER 360-79</u> <u>QUIET ZONES</u>

The Quiet Zones are those areas contained within the dotted lines on Maps A, B, C and D which are attached to By-law 360-79











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TAB:	ENVIRONMENT AND CONSERVATION
SECTION:	NOISE POLLUTION AND CONTROL
SUBJECT:	NOISE ATTENUATION BARRIERS ON MAJOR ROADWAYS
POLICY STATEMENT	The City of Mississauga endeavours to ensure that noise attenuation barriers are constructed where necessary, and that any such barriers are maintained in good condition, both in structure and appearance.
PURPOSE	<ul> <li>This policy identifies responsibilities for construction and maintenance of noise attenuation barriers and is divided into four categories:</li> <li>noise attenuation barriers in existence at the time of approval of this policy that are to be replaced, as part of a replacement program;</li> <li>noise attenuation barriers to be constructed after approval of this policy, as part of new development;</li> <li>new noise barriers to be constructed after approval of this policy, where none currently exist, as part of a retrofit program; and</li> <li>noise attenuation barriers to be constructed after approval of this policy, where none currently exist, as part of a retrofit program; and</li> </ul>
SCOPE	This policy applies to noise attenuation barriers which are or will be installed adjacent to municipal highways which are under the jurisdiction of the City of Mississauga.
LEGISLATIVE AUTHORITY	This policy complies with the <i>Municipal Act, 2001</i> , Ontario Regulation 586/06, the Local Improvement Charges – Priority Lien Status, and the City of Mississauga's Property Standards By- law. Should any of these be amended so that this policy no longer complies, the particular Act, Regulation, or By-law will



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take precedence.

Installation Criteria	<ul> <li>Installation of new noise attenuation barriers is subject to the following:</li> <li>The noise level must be greater than 60 dBA (Leq daytime). (Leq means "equivalent sound level" and daytime means 7:00 a.m. to 11:00 p.m. Leq daytime means daytime average.)</li> <li>The residential area must be adjacent to arterial and major collector roads, as designated in the Official Plan. Retrofit or replacements will not be considered adjacent to freeways or railway tracks, as they are not under the jurisdiction of the City.</li> <li>Barriers must be installed on a complete block to ensure their effectiveness.</li> </ul>
REPLACEMENT PROGRAM CATEGORY – EXISTING BARRIERS	Should a noise attenuation barrier on private property require replacement, the City will construct a new noise attenuation barrier which will be situated, whenever possible, wholly on City property. The costs of construction of the new barrier will be 100 percent City funded. Ongoing maintenance and any future replacements of the noise attenuation barrier will be the responsibility of the City.
	The replacement of deteriorated noise attenuation barriers will be determined based on priority, primarily according to the level of deterioration of the barriers. Priority listing will be reviewed annually and locations presented to Council for replacement approval.
	Maintenance of noise existing attenuation barriers situated on private property will remain the responsibility of the property

private property will remain the responsibility of the property owner until such time as the City replaces the barrier and reinstalls it on City property. The Property Standards By-law establishes requirements of property owners with respect to the maintenance of their property. The City will ensure that noise



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attenuation barriers which are situated on private property are maintained to an acceptable level through enforcement of this by-law.

RETROFIT PROGRAM CATEGORY – NEW BARRIERS	The City may install noise barriers along major collector or arterial roads in areas where such barriers were not previously installed. These installations may be initiated by the City or requested by private property owners by means of a petition. Installations will be dependent on the installation criteria in this policy being met.
	The noise attenuation barrier will be situated on City property whenever possible. The costs of construction of the barrier will be shared on a 50/50 basis with the abutting private property owner. The necessary barrier end returns will be included in the overall estimated cost and the landowners will be assessed on the basis of their rear lot frontage. There will be no adjustments for irregular lot sizes. Ongoing maintenance and any future replacements of the noise attenuation barrier will be the responsibility of the City.
Petition Required	A petition supporting the installation of a noise barrier and signed by the number of landowners as required under Ontario Regulation 586/06, <i>Municipal Act, 2001,</i> must be filed with the City Clerk.
	Property owners wishing to oppose the installation of a noise barrier which was initiated by the City must file a petition with the City Clerk.
CAPITAL WORKS PROJECT CATEGORY	Noise barriers may be constructed by the City in conjunction with a road widening project if no noise attenuation barriers exist, and the proposed additional lanes of traffic are found to adversely affect the daytime noise level beyond the established criteria (refer to the "Installation Criteria" section of this policy for the applicable criteria.). If the installation criteria are satisfied, the

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City may elect to pre-install a noise attenuation barrier up to three years prior to the scheduled road widening.

Noise attenuation barriers may be constructed by the City at 100% City cost, on arterial roads as part of a significant capital improvement project. such as improvements at major intersections, transit priority and/or related infrastructure improvements, and major asphalt resurfacing or reconstruction, where no road widening is being undertaken. The noise attenuation barriers must be installed where none currently exist and meet the criteria as outlined in the "Installation Criteria" section of this policy. The cost of construction will be included in the project costs. The noise attenuation barriers will be situated on City property. Ongoing maintenance and future replacements will be the responsibility of the City. NEW DEVELOPMENT Servicing Agreements for new developments which require the CATEGORY construction of a noise attenuation barrier will specify that the noise attenuation barrier be situated on City property. Costs of construction will be the responsibility of the developer. Ongoing maintenance and any future replacements of the noise attenuation barrier will be the responsibility of the City. **REFERENCE:** OW-192-88 - 1988 05 24 OW-114-92 - 1992 04 27 GC-0169-2005 - 2005 03 30 2007 08 23 Housekeeping amendment- to update Ont. Regulation 119/03 to Ont. Regulation 586/06) GC-0067-2009 - 2009 03 11 - construction of noise barriers without road widening GC-0166-2011 – 2011 04 13 – change in cost sharing to 100% City for replacement of deteriorated barriers



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LAST REVIEW DATE:

April, 2011

CONTACT:

For more information, contact the Transportation and Works Department, Transportation and Infrastructure Planning Division.