



Traffic Noise Assessment & Control

**146 Mountshannon Drive
Residential Development**

Ottawa, Ontario

REPORT: *GmE* 11-033

Prepared For:

Kevin Yemm
Richcraft
2280 St. Laurent Blvd, Suite 201
Ottawa, Ontario
K1B 1A4

Prepared By:

Jeremy Charbonneau, M.A.Sc., E.I.T.
Vincent Ferraro, M.Eng, P.Eng.

June 17, 2011

EXECUTIVE SUMMARY

This report describes an environmental noise assessment for the proposed residential development at 146 Mountshannon Drive in Ottawa, Ontario. The assessment considers the effects of noise produced by local roadway, railway and aircraft traffic. The assessment was performed on the basis of:

- Theoretical noise calculation methods conforming to both the City of Ottawa¹ and Ministry of the Environment² guidelines;
- Noise level criteria provided in the City Of Ottawa, Environmental Noise Control Guidelines (ENCG);
- Future vehicular traffic volumes as required by the City of Ottawa's Official Plan;
- Aircraft Noise Exposure Forecast / Noise Exposure Projection contours (NEF/NEP) generated by the Ottawa MacDonald-Cartier International Airport; and
- Site plans received in May of 2011 provided by David Schaeffer Engineering Ltd. (DSEL).

As a result of noise levels at the plane of living room and bedroom windows ranging between 55 and 63 dBA along Mountshannon Drive, and due to the site's location between the NEF 25 and NEF 30 aircraft noise contours, some mitigation is required to satisfy the ENCG. Specifically, the entire development will require the installation of forced air ventilation systems, including provisions for future installation of central air conditioning systems, as well as Notice on Title (Type C³) to be included on all Agreements of Purchase and Sale as follows:

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

¹ City of Ottawa Environmental Noise Control Guidelines, SS Wilson Associates, May 10, 2006

² MOE, LU-131 Noise Assessment In Land Use Planning, Tables 1 & 2, page 8

³ City of Ottawa Environmental Noise Control Guidelines, SS Wilson Associates, May 10, 2006

In addition, the following restrictive covenant must also be included in all Agreements of Purchase and Sale:

“The Transferee covenants with the Transferor that required clauses, verbatim, shall be included in all subsequent Agreements of Purchase and Sale and deeds warning of the lands conveyance described herein, shall run with the said lands for the benefit of the subsequent owners of the said land.”

To ensure that the indoor criteria are met, building components shall be compliant with the current Ontario Building Code (OBC 2006) standards. Due to the close proximity of intermittent noise sources (i.e. pass-by events from aircraft and diesel trains), particular care should be taken to ensure exterior walls are acoustically sealed. Façade penetrating elements, such as exhaust ducts and vents should be internally treated with 12 millimetre thick, acoustic lining extending no less than three metres from the exterior surface to reduce the potential for ambient noise intrusion.

Additionally, in order to minimize annoyance of occupants to intermittent pass-by noise, windows and patio doors enclosing sensitive spaces, such as bedrooms and living rooms, are recommended to have a minimum STC value of 25.

A review of window supplier literature indicates that this level can be achieved by a variety of window systems having a combination of glass thickness and interpane spacing. We have not specified any specific window configurations, as there are several manufacturers and various combinations of window components that will offer the necessary sound attenuation rating. However, it should be understood that it is the responsibility of the manufacturer to ensure that the specified window achieves the required STC. This can only be assured by using window configurations that have been certified by laboratory testing. Experience on current and past projects indicates that sliding patio doors are often the weakest component in the exterior building envelope with respect to noise.

TABLE OF CONTENTS

	PAGE
1. INTRODUCTION	1
2. TERMS OF REFERENCE	1
3. OBJECTIVES	2
4. METHODOLOGY	2
4.1 Background	2
4.2 Roadway Traffic Noise	3
4.2.1 Criteria for Roadway Traffic Noise	3
4.2.2 Roadway Traffic Volumes	3
4.2.3 Theoretical Roadway Noise Predictions	5
4.3 Railway Traffic Noise	6
4.3.1 Criteria for Railway Traffic Noise	6
4.3.2 Railway Traffic Volumes	6
4.3.3 Theoretical Railway Noise Predictions	7
4.4 Aircraft Noise	8
4.4.1 Criteria for Aircraft Noise	8
4.4.2 Theoretical Aircraft Noise Predictions	9
5. RESULTS	10
5.1 Traffic Noise and Railway Noise Levels	10
5.2 Aircraft Noise Levels	12
5.3 Construction Requirements	13
6. CONCLUSIONS AND RECOMMENDATIONS	14

PHOTOGRAPHS

FIGURES

LIST OF APPENDICES

APPENDIX A: NOISE MODELLING COMPARISON STAMSON RESULTS COMPARED TO ORNAMENT MODEL

APPENDIX B: ROADWAY NOISE MODELLING RESULTS ORNAMENT INPUT & OUTPUT DATA

APPENDIX C: RAILWAY NOISE MODELLING RESULTS STAMSON INPUT & OUTPUT DATA

1. INTRODUCTION

Gradient Microclimate Engineering Inc. (*GmE*) was retained by Richcraft Homes to undertake a traffic noise assessment for the proposed residential development to be located at 146 Mountshannon Drive in Ottawa, Ontario. *GmE's* scope of work involved assessing exterior and interior noise levels generated by local roadway, railway, and commercial aircraft traffic (from the Ottawa MacDonald-Cartier International Airport). The assessment was performed on the basis of theoretical predictions conforming to City of Ottawa⁴ and Ministry of the Environment (MOE)⁵ guidelines. Noise calculations were based on architectural drawings, received in May 2011, and future traffic volumes corresponding to the Official Plan⁶ (OP) for the City Of Ottawa.

2. TERMS OF REFERENCE

The focus of this traffic noise assessment is the proposed residential development to be located at 146 Mountshannon Drive in Ottawa, Ontario. The study site is located approximately 435 metres (m) south of Fallowfield Road, 5.0 kilometres (km) west of the Ottawa MacDonald-Cartier International Airport (OMCIA), and approximately 345 m southeast of the VIA Rail train tracks leading into Fallowfield Station. The study site is bound by Daventry Crescent to the west and Mountshannon Drive to the north, through east, to the south. Local surroundings comprise high-density suburban low-rise developments. Upon completion, the proposed residential development will include five blocks of two level townhouses, five blocks of four level terrace flats (i.e. stacked dwellings), and four blocks of three and four level tiered terrace flats. The development will contain a total of 182 units (22 of which are found in the townhomes fronting onto Mountshannon Drive), as well as an on-site storage and garbage facility. Figures 1 and 2 illustrate the surrounding context and site plan, respectively, while Photographs 1 and 2 illustrate the existing site.

The study site is located within the Airport Vicinity Development Zone and specifically within the Noise Exposure Forecast (NEF) 25 Line, (see Figure 3). Due to alignment with airport

⁴ City of Ottawa Environmental Noise Control Guidelines, SS Wilson Associates, May 10, 2006

⁵ MOE, LU-131 Noise Assessment In Land Use Planning, Tables 1 & 2, page 8

⁶ www.ottawa.ca/city_hall/ottawa2020/official_plan/vol_1/07_annexes/annex_01/index_en.html

runways, many flight paths run directly over the study site. Photograph 3 shows a typical aircraft pass-by event over the study area.

3. OBJECTIVES

The main goals of this work are to: (i) calculate the future noise levels within the development produced by local roadway and railway traffic; (ii) identify the impact from aircraft as outlined by the Noise Exposure Forecast / Noise Exposure Projection contours (NEF/NEP) generated by the OMCIA; (iii) ensure that interior noise levels do not exceed the allowable limits specified by the City of Ottawa's Environmental Noise Control Guidelines (as outlined in Sections 4.2.1, 4.3.1 and 4.4.1 of this report); and (iv) provide, where necessary, a comfortable outdoor living area (OLA).

4. METHODOLOGY

4.1 Background

Noise can be defined as any obtrusive sound. It is created at a source, transmitted through a medium, such as air, and intercepted by a receiver. Noise may be characterized in terms of the power of the source or the sound pressure at a specific distance. While the power of a source is characteristic of that source, the sound pressure depends on the location of the receiver and the path that the noise takes to reach the receiver. Its measurement is based on the decibel unit, dBA, which is a logarithmic ratio referenced to a standard noise level (2×10^{-5} Pascals). The 'A' suffix refers to a weighting scale, which represents the noise perceived by the human ear. With this scale, a doubling of power results in a 3 dBA increase in measured noise levels and is just perceptible to most people. An increase of 10 dBA is often perceived to be twice as loud.

According to the MOE⁷, where potential residential land use may be affected by a combination of transportation noise sources (i.e. rail, aircraft, and automobiles), the impact on the potential land use from each source must be determined independently. In addition, should noise control measures be required to limit daytime or nighttime noise, the necessary mitigation measures must also be identified separately. The distinction between sources is made due to inherent differences in the nature of each noise and human sensitivity to particular types of noise.

⁷ Noise Assessment Criteria in Land Use Planning, Annex to MOE Publication LU-131, 1997, Ontario.

4.2 Roadway Traffic Noise

4.2.1 Criteria for Roadway Traffic Noise

For vehicle traffic, the equivalent sound energy level, L_{EQ} , provides a measure of the time varying noise levels, which is well correlated with the annoyance of sound. It is defined as the continuous sound level, which has the same energy as a time varying noise level over a period of time. For roadways, the L_{EQ} is commonly calculated on the basis of a 16-hour (L_{EQ16}) daytime (07:00-23:00) / 8-hour (L_{EQ8}) nighttime (23:00-07:00) split to assess its impact on residential buildings. The City of Ottawa's Environmental Noise Control Guidelines (ENCG) specify that the recommended indoor noise limit ranges (that are relevant to this study) are 40 dBA for residential sleeping quarters and 45 dBA for residential living areas. For outdoor living areas (OLA's), the Guidelines specify a limit of 55 dBA during the daytime period.

Noise levels predicted at the Plane of the Window (POW) and within OLA's dictate the action required to achieve the recommended sound levels. Mitigation of noise levels is required when: (i) POW noise levels exceed 65 dBA daytime or 60 dBA nighttime; (ii) when POW noise levels range between 55 and 65 dBA daytime; or between 50 and 60 dBA nighttime; and (iii) when OLA noise levels exceed 60 dBA during the daytime. In the first case (i), windows with adequate Sound Transmission Class (STC) ratings must be selected to provide the required noise attenuation, and units must be fitted with forced air heating and air conditioning systems. For case (ii), units must be fitted with forced air ventilation systems with provisions for the future installation of air conditioning systems. For case (iii), which applies to the OLA, noise barriers must be provided that will reduce noise levels to below 60 dBA, and as close to 55 dBA as technically, economically and administratively feasible.

4.2.2 Roadway Traffic Volumes

The MOE document LU-131 requires the use of the Annual Average Daily Traffic (AADT) volumes for future traffic noise predictions, projected to exist ten years into the future, with an average annual growth rate of 2% per year. In contrast, the City of Ottawa's Official Plan (OP) requires that the AADT volumes should be based on roadway allowances, which are defined by the Right of Way (ROW) protection values identified in the OP for specific roadways.

To ensure compliance with both protocols, *GmE* took the following action:

- Recent counted traffic data was acquired from the City of Ottawa, upon which a growth rate of 2% per year was applied and extrapolated to the City’s OP horizon year of 2021.
- Traffic volumes based on roadway ROW values were obtained from the City of Ottawa Official Plan⁸ (Annex 1 – Road Classification and Rights of Way). For roadways where the ROW information was unavailable, the designation was assumed based on the size of the existing road and available traffic information.

In all cases, the higher of the OP versus projected values were used to calculate future noise levels. The primary sources of environmental traffic noise influencing the proposed development include vehicular traffic along Mountshannon Drive and Longfields Drive. In addition to the primary noise sources, Table 1 below summarizes all of the AADT values for each roadway considered in the assessment.

TABLE 1: ROADWAY TRAFFIC DATA

ROADWAY	ROADWAY CLASS	SPEED LIMIT	OFFICIAL PLAN AADT	AVAILABLE TRAFFIC AADT FROM COUNT	YEAR OF TRAFFIC AADT	PROJECTED 2021 AADT
Mountshannon Drive	2-UCU	40	8,000	2,697	2008	3,489
Longfields Drive	2-UCU	50	8,000	3,711	2008	4,801
Earl Mulligan	2-UCU	50	8,000	N/A	N/A	N/A
Fallowfield Road	6-UAD	80	50,000	N/A	N/A	N/A

Note that the above AADT values used are considered conservative and were verified through discussions with the City of Ottawa’s land use planning department prior to submittal of this study.

⁸ www.ottawa.ca/city_hall/ottawa2020/official_plan/vol_1/07_annexes/annex_01/index_en.html

4.2.3 Theoretical Roadway Noise Predictions

Traffic noise predictions were performed using the Ontario Road Noise Analysis Method for Environment and Transportation (ORNAMENT). This prediction method was developed by the Ministry of the Environment of Ontario, and is typically implemented in the form of STAMSON, a software package also created by the Ministry. Due to certain program limitations, *GmE* has developed a similar software package that employs the ORNAMENT calculation method. To verify the reliability of this program, *GmE* performed comparative calculations for two receptor locations using both software packages. The comparative input and output data, including the calculated results, are provided in Appendix A.

The calculations were performed by treating each roadway as separate line sources of noise, and by using existing building locations as noise barriers. The surrounding building massing and roadway layout geometry was acquired from the City of Ottawa Survey and Mapping Department, while site plan information was received from DSEL in May of 2011. In addition to the traffic volumes summarized in Table 1, theoretical noise predictions were also based on the following parameters:

- Truck traffic on all roadways was taken to comprise 5% heavy trucks and 7% medium trucks, as per City of Ottawa requirements for noise level predictions;
- The day/night split was taken to be 92% / 8% respectively for all streets;
- Absorptive and reflective intermediate ground surfaces based on specific source-receiver path ground characteristics; and
- Varying surrounding topography as described in base-mapping data.

Thirty-nine (39) noise receptor locations were considered for calculations, which are described in Table 4 and illustrated in Figure 2. The initial calculations revealed that outdoor noise levels from roadway traffic were not sufficiently high as to warrant an investigation of indoor noise levels.

4.3 Railway Traffic Noise

4.3.1 Criteria for Railway Traffic Noise

The methods for the analysis of rail noise are similar to those for roadway noise. However, due to the characteristic high noise levels resulting from train operations that occur over short periods (i.e. whistles, brake squealing), and a significant low frequency component produced by the movement of the locomotive along the track, the two sound source types require separate analyses, particularly when assessing indoor sound levels. Therefore, in order to account for the special character of railway sound, the indoor sound level criteria are more stringent by 5 dB as compared to the road traffic criteria. This difference typically results in requirements for upgraded glazing elements to provide better noise attenuation by the building envelope. Interior noise level criteria include the influence from rail crossings and warning whistle bursts.

The OLA criterion is the same for both road and rail noise levels: when OLA noise levels exceed 60 dBA during the daytime, noise barriers must be provided that will reduce noise levels to below 60 dBA, and as close to 55 dBA as technically, economically and administratively feasible. The OLA criteria exclude the influence from rail whistle noise.

4.3.2 Railway Traffic Volumes

Similar to roadway traffic volumes, document LU-131 requires the use of the AADT volumes for future rail traffic noise predictions. Volumes were again projected to exist ten years into the future with an average annual growth rate of 2% per year. Existing daily rail traffic data was acquired from the VIA Rail website, upon which a growth rate of 2% per year was applied and extrapolated to the City's OP horizon year of 2021. Table 2 below summarizes the AADT values for the rail traffic considered in the assessment.

TABLE 2: RAILWAY TRAFFIC DATA

RAILWAY	TRAIN CLASS	SPEED LIMIT	CURRENT TRAIN COUNTS	YEAR OF COUNT	PROJECTED 2021 RAIL VOLUME
VIA Rail line South of Fallowfield Station	Diesel (Passenger)	150 km/hr	10 Day / 2 Night	2011	12 Day / 2 Night

4.3.3 Theoretical Railway Noise Predictions

When an area is influenced by road and rail traffic, the criteria requires the outdoor noise impact from each source to be combined for one impact value. Calculations were performed for receptors in close proximity to the railway with the assistance of the (MOE) rail and road noise analysis program STAMSON 5.04 which incorporates the calculation model ‘*Sound from Trains Environment Analysis Method*’ (STEAM). The impact from railway noise is then combined with roadway predictions using a logarithmic addition at each point of reception and compared to the relevant criteria.

Similar to the roadway calculations, the railway line was treated as a single line source of noise which used existing building locations as noise barriers. In addition to the railway volumes summarized in Table 2, theoretical noise predictions were also based on the following parameters:

- All trains operating in the area were assumed to be diesel passenger trains;
- One locomotive was assumed per train, with an average of four cars per train;
- The train speed was set to a worst case, no-stop scenario of 150 km/h;
- Whistle events were only considered for indoor noise level calculations with a crossing at Fallowfield Road;
- Rail lines were assumed to be not welded.

As noise generated from both on-road and railway traffic is to be combined, the same thirty-nine (39) receptor locations were considered as identified in Table 4 and Figure 2.

4.4 Aircraft Noise

4.4.1 Criteria for Aircraft Noise

The ENCG outlines the sound level criteria for aircraft noise based on a site's location within the Ottawa Airport Vicinity Development Zone (OAVDZ), outside of the Ottawa Airport Operating Influence Zone (OAOIZ)⁹. The OAVDZ is a zone around the airport defined by lines that follow fixed features, such as roads or lot boundaries, and generally represents the 25 NEF/NEP contour. Where commercial air traffic may negatively influence occupants, noise-sensitive developments are generally not permitted, although infill and redevelopment may occur. NEF/NEP contours reflect the predetermined noise levels which would impact sensitive areas around airports. These contours include the influences of noise levels from aircraft flight, take-off, and ground operations to specific urban areas. Noise generated from aircraft traffic is represented as Effective Perceived Noise Levels (EPNL), a unit of noise measurement that accounts for variations in the human perception of pure tones and noise duration. Recorded noise levels are plotted geographically to generate NEF/NEP contour maps, where lower NEF/NEP levels correspond to lower average outdoor noise levels.

According to accepted research¹⁰, Health and Welfare Canada states that people continuously exposed to NEF/NEP values less than 35 will not suffer adverse physical or psychological effects. Sociological surveys¹¹ have indicated that negative community reactions to noise levels may start at about 25 NEF/NEP. Figure 3 illustrates the study building location with respect to the OAVDZ¹² surrounding the OMCIA. Table 3 identifies the sound level criteria for relevant indoor living spaces exposed to aircraft noise.

TABLE 3 – INDOOR AIRCRAFT SOUND LEVEL CRITERIA*

TYPE OF SPACE	INDOOR NEF/NEP	APPROXIMATE Leq _{24hr}
Living/dining areas of residences	5	36 - 39 dBA
Sleeping quarters of residences	0	31 - 34 dBA

*Reproduced from Page 6 of the ENCG.

⁹ City of Ottawa Environmental Noise Control Guidelines, SS Wilson Associates, May 10, 2006

¹⁰ Report of the Special Meeting on Aircraft Noise in the Vicinity of Aerodromes, Montreal ICAO, 1969.

¹¹ Noise in Urban and Suburban Areas. Bolt, Beanik and Newman, Inc., Washington, January 1967.

¹² Reproduced from - City of Ottawa Environmental Noise Control Guidelines, (Figure 1.1 on pg. 5).

4.4.2 Theoretical Aircraft Noise Predictions

The impact of aircraft noise on the local environment was determined using IBANA-CALC, a software package developed by the National Research Council of Canada. This software calculates indoor noise levels for standard roof, wall and window construction details for appropriate aircraft noise source spectra. Since aircraft produce uniform noise levels over large areas, building construction is more carefully considered than specific building location for interior noise level calculations. For this project, an NEF value of 25 has been applied due to the study site location, as illustrated in Figure 3. For this assessment, only the outdoor noise level calculated by IBANA-CALC is required for analysis and comparison against surface transportation noise sources.

The influence of aircraft noise is based on NEF/NEP contours, geographically plotted values that quantify the noise levels from airport traffic on adjacent properties. The ENCG guidelines state that locations corresponding to NEF/NEP 25 or greater require improvements to the typical building envelope components, including exterior walls, roofs, windows and doors, to ensure adequate noise attenuation by the building envelope. In IBANA-CALC, construction elements are rated on the basis of Outdoor-Indoor Transmission Class (OITC). The OITC is a single number rating of the sound insulation (similar to Acoustic Insulation Factor values referred to in the ENCG document) of an exterior partition against typical outdoor noises defined in the ASTM standard E1332. The procedure for determining OITC ratings includes specifying a standard source spectrum corresponding to an NEF/NEP and calculation of the reduction in noise levels to the interior across the wall components.

5. RESULTS

5.1 Traffic Noise and Railway Noise Levels

Outdoor noise levels within the study site are presented in Table 4, for noise receptor locations that are illustrated in Figure 2. Noise levels presented here represent the logarithmic sum of on-road traffic and railway traffic with whistle noise included. Details of the calculations are provided in Appendix B.

TABLE 4: EXTERIOR NOISE LEVELS DUE TO ROAD AND RAIL TRAFFIC

RECEPTOR #	LOCATION	NOISE LEVELS (dBA)	
		DAY	NIGHT
1	Front of Townhomes - Block 5 Level 1	63	55
2	Rear of Townhomes - Block 5 Level 1	53	46
3	Rear of Terrace Flats - Block 14 Level 1	52	44
4	Rear of Terrace Flats - Block 13 Level 1	48	41
5	Front of Townhomes - Block 1 Level 1	62	54
6	Rear of Townhomes - Block 1 Level 1	46	40
7	Front of Terrace Flats - Block 10 Level 1	42	35
8	Rear of Terrace Flats - Block 10 Level 1	39	32
9	Front of Terrace Flats - Block 11 Level 1	39	32
10	Rear of Terrace Flats - Block 12 Level 1	45	38
11	Rear of Terrace Flats - Block 6 Level 1	50	42
12	Front of Terrace Flats - Block 6 Level 1	39	32
13	Front of Terrace Flats - Block 7 Level 1	48	41
14	Rear of Terrace Flats - Block 7 Level 1	39	32
15	Front of Terrace Flats - Block 8 Level 1	44	37
16	Rear of Terrace Flats - Block 9 Level 1	44	37
17	Side Elevation - Block 6 Level 1	42	35
18	Side Elevation - Block 9 Level 1	47	39
19	OLA Behind Block 6	45	38
20	OLA Between Blocks 7 & 8	42	34
21	OLA Behind Block 9	44	37
22	OLA Between Blocks 10 & 11	43	36
23	OLA Behind Block 12	44	37
24	OLA Behind Block 14	52	44

TABLE 4 (CONT'D): EXTERIOR NOISE LEVELS DUE TO ROAD AND RAIL TRAFFIC

RECEPTOR #	LOCATION	NOISE LEVELS (dBA)	
		DAY	NIGHT
25	OLA Behind Block 13	49	42
26	Rear of Terrace Flats - Block 14 Level 4	54	46
27	Rear of Terrace Flats - Block 13 Level 4	52	44
28	Front of Terrace Flats - Block 10 Level 4	50	43
29	Rear of Terrace Flats - Block 10 Level 4	41	34
30	Front of Terrace Flats - Block 11 Level 4	43	35
31	Rear of Terrace Flats - Block 12 Level 4	49	42
32	Rear of Terrace Flats - Block 6 Level 3	51	43
33	Front of Terrace Flats - Block 6 Level 3	43	35
34	Front of Terrace Flats - Block 7 Level 3	49	42
35	Rear of Terrace Flats - Block 7 Level 4	42	35
36	Front of Terrace Flats - Block 8 Level 3	47	39
37	Rear of Terrace Flats - Block 9 Level 3	47	40
38	Side Elevation - Block 6 Level 3	46	39
39	Side Elevation - Block 9 Level 3	48	41

Predicted noise levels across the development are expected to range between 39 and 63 dBA during the daytime period (07:00-23:00 hrs), and between 32 and 55 dBA during the nighttime period (23:00-07:00 hrs). To ensure adequate protection from outdoor noise levels, the combined values for all surface transportation noise sources have been used to interpret noise mitigation requirements. Some minor mitigation measures, as well as Notices on Title, will be required to satisfy the criteria set forth by the ENCG, which is summarized in Sections 4.2.1 and 4.3.1 of this report. For an individual breakdown of noise impacts from both road and rail sources, refer to Table C1 and C2 in Appendix C.

Window façades located on the north elevations of the town houses will experience the highest noise levels, reaching levels as high as 63 dBA during daytime hours. According to the ENCG, building components installed in compliance with the latest version of the Ontario Building Code (OBC 2006) standards will provide sufficient protection from outdoor noise levels.

5.2 Aircraft Noise Levels

Output from the IBANA-CALC software and inspection of relevant information indicate that:

- Outdoor sound levels, according to the 25 NEF/NEP contour as calculated by IBANA-CALC, are approximately 57 dBA;
- Corresponding indoor noise levels, would be equal to or less than 32 dBA;
- These indoor noise levels will be achieved provided that the selection and installation of all architectural elements meets or exceeds minimum Ontario Building Code (OBC) construction standards;
- The indoor noise value of 32 dBA is within the acceptable criteria range of 31 dBA and 34 dBA suitable for sleeping quarters in residences; hence
- As the development is located within the NEF 25 zone, minor mitigation measures, as well as Notices on Title, will be required to satisfy the criteria set forth by the ENCG, which are summarized in Section 4.4.1 of this report.

5.3 Construction Requirements

To ensure that the indoor criteria are met, building components shall be compliant with the current Ontario Building Code (OBC 2006) standards. Due to the close proximity of intermittent noise sources (i.e. pass-by events from aircraft and diesel trains), particular care should be taken to ensure exterior walls are acoustically sealed. Façade penetrating elements, such as exhaust ducts and vents should be internally treated with 12 millimetre thick, acoustic lining extending no less than 3 metres from the exterior surface to reduce the potential for ambient noise intrusion.

Additionally, in order to minimize annoyance of occupants to intermittent pass-by noise, windows and patio doors enclosing sensitive spaces, such as bedrooms and living rooms, are recommended to have a minimum STC value of 25.

A review of window supplier literature indicates that this level can be achieved by a variety of window systems having a combination of glass thickness and interpane spacing. We have not specified any specific window configurations, as there are several manufacturers and various combinations of window components that will offer the necessary sound attenuation rating. However, it should be understood that it is the responsibility of the manufacturer to ensure that the specified window achieves the required STC. This can only be assured by using window configurations that have been certified by laboratory testing. Experience on current and past projects indicates that sliding patio doors are often the weakest component in the exterior building envelope with respect to noise.

6. CONCLUSIONS AND RECOMMENDATIONS

As a result of noise levels at the plane of living room and bedroom windows ranging between 55 and 63 dBA along Mountshannon Drive, and due to the site's location between the NEF 25 and NEF 30 contours, some mitigation is required to satisfy the ENCG. Specifically, the entire development will require the installation of forced air ventilation systems, including provisions for future installation of central air conditioning systems, as well as Notice on Title (Type C¹³) to be included on all Agreements of Purchase and Sale as follows:

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

In addition, the following restrictive covenant must also be included in all Agreements of Purchase and Sale:

“The Transferee covenants with the Transferor that required clauses, verbatim, shall be included in all subsequent Agreements of Purchase and Sale and deeds warning of the lands conveyance described herein, shall run with the said lands for the benefit of the subsequent owners of the said land.”

To ensure that the indoor criteria are met, building components shall be compliant with the current Ontario Building Code (OBC 2006) standards. Due to the close proximity of intermittent noise sources (i.e. pass-by events from aircraft and diesel trains), particular care should be taken to ensure exterior walls are acoustically sealed. Façade penetrating elements, such as exhaust ducts and vents should be internally treated with 12 millimetre thick, acoustic

¹³ City of Ottawa Environmental Noise Control Guidelines, SS Wilson Associates, May 10, 2006

lining extending no less than 3 metres from the exterior surface to reduce the potential for ambient noise intrusion.

Additionally, in order to minimize annoyance of occupants to intermittent pass-by noise, windows and patio doors enclosing sensitive spaces, such as bedrooms and living rooms, are recommended to have a minimum STC value of 25.

A review of window supplier literature indicates that this level can be achieved by a variety of window systems having a combination of glass thickness and interpane spacing. We have not specified any specific window configurations, as there are several manufacturers and various combinations of window components that will offer the necessary sound attenuation rating. However, it should be understood that it is the responsibility of the manufacturer to ensure that the specified window achieves the required STC. This can only be assured by using window configurations that have been certified by laboratory testing. Experience on current and past projects indicates that sliding patio doors are often the weakest component in the exterior building envelope with respect to noise.

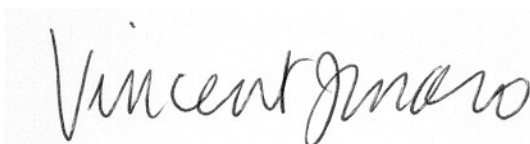
This concludes our assessment and report. If you have any questions or wish to discuss our findings please advise us. In the interim, we thank you for the opportunity to be of service.

Yours truly,

Gradient Microclimate Engineering Inc.

A handwritten signature in black ink, appearing to read "Jeremy Charbonneau".

Jeremy Charbonneau, M.A.Sc., E.I.T.
Project Engineer
GmE 11-033

A handwritten signature in black ink, appearing to read "Vincent Ferraro".

Vincent Ferraro, M.Eng., P.Eng.
Principal



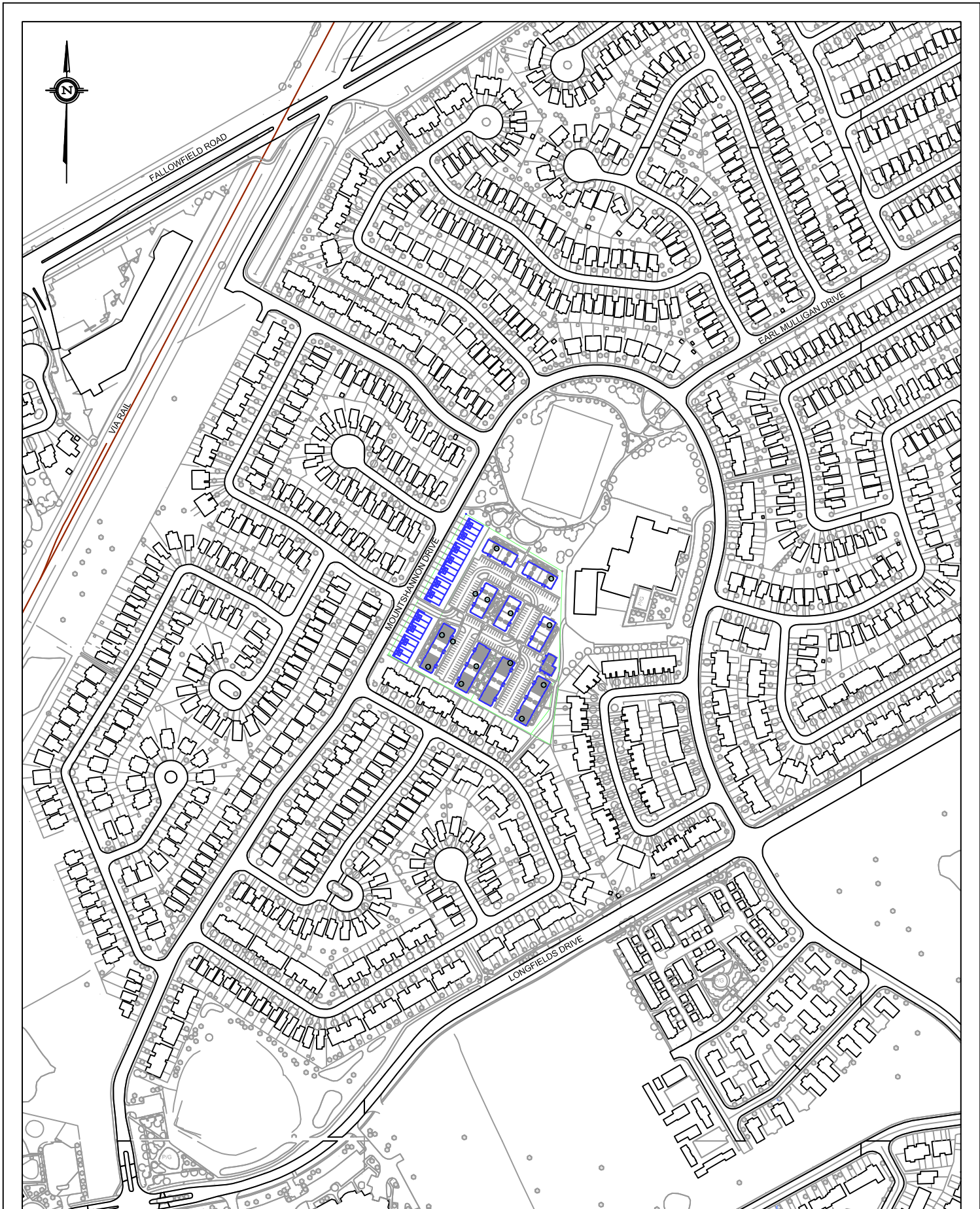
PHOTOGRAPH 1: VIEW OF STUDY SITE LOOKING EAST FROM MOUNTSHANNON DRIVE



PHOTOGRAPH 2: VIEW OF STUDY SITE LOOKING SOUTHWEST FROM ST. LUKE CATHOLIC SCHOOL



PHOTOGRAPH 3: AIRCRAFT APPROACHING FROM THE WEST, OVER EXISTING HOUSING



PROJECT	146 MOUNTSHANNON DRIVE, OTTAWA, ONTARIO	
SCALE	1:5000 (APPROX.)	DRAWING NO. GME11-033-01
DATE	JUNE 02, 2011	DRAWN BY J.E.C.

DESCRIPTION

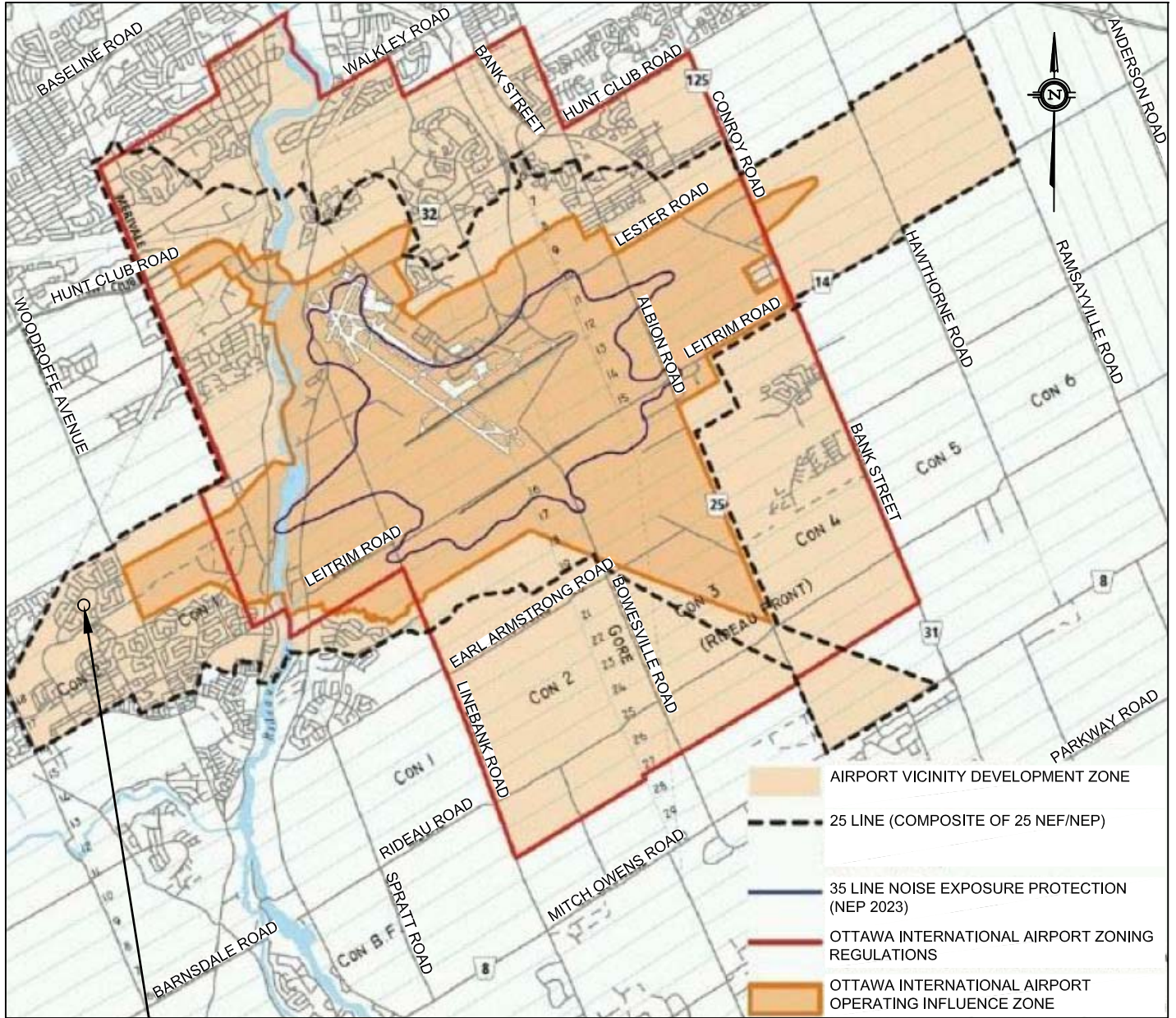
FIGURE 1:
SURROUNDING SITE PLAN



GROUND LEVEL RECEPTOR
UPPER LEVEL RECEPTOR

PROJECT	146 MOUNTSHANNON DRIVE, OTTAWA, ONTARIO	
SCALE	1:1000 (APPROX.)	DRAWING NO. GME11-033-02
DATE	JUNE 02, 2011	DRAWN BY J.E.C.

DESCRIPTION
FIGURE 2:
 SITE PLAN AND NOISE RECEPTOR
 LOCATIONS



146 MOUNTSHANNON DRIVE

FIGURE REPRODUCED FROM THE CITY OF OTTAWA ENVIRONMENTAL NOISE CONTROL GUIDELINES (FIGURE 1.1 - OTTAWA AIRPORT OPERATING INFLUENCE ZONE (AOIZ) AND NEF/NEP CONTOUR LINES (2006))

APPENDIX A

NOISE MODELLING COMPARISON
STAMSON RESULTS COMPARED TO ORNAMENT MODEL

A1 - MODEL COMPARISON

Two receptors were chosen at random for the comparison, Receptor 1 (Front of Townhomes - Block 5) and Receptor 27 (Rear of Flatterrace - Block 13, Level 4). Each receptor was calculated using both noise modelling programs with input and output results located in the following pages. While STAMSON is limited to 10 receptors, the ORNAMENT Model created by *GmE* can calculate noise levels from many more source roadways with the same level of accuracy.

The ORNAMENT Model was programmed to follow the Ontario Road Noise Analysis Method for Environment and Transportation (ORNAMENT)¹ technical document as it was reprinted in September 1999. Calculations were performed using the various Tables and Figures throughout the document as instructed in the Prediction Worksheet included with the document.

¹ Schroter, V. Chie, C. "Ontario Road Noise Analysis Method for Environment and Transportation (ORNAMENT)," October 1989 (Reprinted September 1999), Queen's Printer for Ontario.

RECEPTOR 1 - STAMSON



STAMSON 5.0 NORMAL REPORT Date: 02-06-2011 13:40:40
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec01.te Time Period: Day/Night 16/8 hours
Description: GME11-033 - 146 MOUNTSHANNON - STAMSON CHECK

Road data, segment # 1: Mountshan1 (day/night)

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 40 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: Mountshan1 (day/night)

Angle1 Angle2 : -89.00 deg 85.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 15.30 / 15.30 m
Receiver height : 4.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00



Road data, segment # 2: Mountshan2 (day/night)

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 40 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 2: Mountshan2 (day/night)

Angle1 Angle2 : 14.00 deg 19.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 160.20 / 160.20 m
Receiver height : 4.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 3: Fallowfield (day/night)

Car traffic volume : 40480/3520 veh/TimePeriod *

Medium truck volume : 3220/280 veh/TimePeriod *

Heavy truck volume : 2300/200 veh/TimePeriod *

Posted speed limit : 80 km/h

Road gradient : 0 %

Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 50000

Percentage of Annual Growth : 0.00

Number of Years of Growth : 0.00

Medium Truck % of Total Volume : 7.00

Heavy Truck % of Total Volume : 5.00

Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 3: Fallowfield (day/night)

Angle1 Angle2 : -45.00 deg 62.00 deg

Wood depth : 0 (No woods.)

No of house rows : 4 / 4

House density : 95 %

Surface : 1 (Absorptive ground surface)

Receiver source distance : 439.80 / 439.80 m

Receiver height : 4.50 / 4.50 m

Topography : 2 (Flat/gentle slope; with barrier)

Barrier angle1 : -45.00 deg Angle2 : 62.00 deg

Barrier height : 6.00 m

Barrier receiver distance : 66.80 / 66.80 m

Source elevation : 92.00 m

Receiver elevation : 92.76 m

Barrier elevation : 92.00 m

Reference angle : 0.00



Results segment # 1: Mountshan1 (day)

Source height = 1.50 m

ROAD (0.00 + 62.49 + 0.00) = 62.49 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-89	85	0.57	63.96	0.00	-0.14	-1.33	0.00	0.00	0.00	62.49

Segment Leq : 62.49 dBA

Results segment # 2: Mountshan2 (day)

Source height = 1.50 m

ROAD (0.00 + 32.14 + 0.00) = 32.14 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
14	19	0.57	63.96	0.00	-16.15	-15.67	0.00	0.00	0.00	32.14

Segment Leq : 32.14 dBA

Results segment # 3: Fallowfield (day)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	4.50	4.69	96.69

ROAD (0.00 + 40.45 + 0.00) = 40.45 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-45	62	0.57	77.72	0.00	-23.04	-2.67	0.00	-11.55	0.00	40.45
-45	62	0.21	77.72	0.00	-17.75	-2.42	0.00	0.00	-5.65	51.90

Segment Leq : 40.45 dBA

Total Leq All Segments: 62.52 dBA



Results segment # 1: Mountshan1 (night)

Source height = 1.50 m

ROAD (0.00 + 54.90 + 0.00) = 54.90 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-89	85	0.57	56.36	0.00	-0.14	-1.33	0.00	0.00	0.00	54.90

Segment Leq : 54.90 dBA

Results segment # 2: Mountshan2 (night)

Source height = 1.50 m

ROAD (0.00 + 24.54 + 0.00) = 24.54 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
14	19	0.57	56.36	0.00	-16.15	-15.67	0.00	0.00	0.00	24.54

Segment Leq : 24.54 dBA

Results segment # 3: Fallowfield (night)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	4.50	4.69	96.69

ROAD (0.00 + 32.86 + 0.00) = 32.86 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-45	62	0.57	70.12	0.00	-23.04	-2.67	0.00	-11.55	0.00	32.86
-45	62	0.21	70.12	0.00	-17.75	-2.42	0.00	0.00	-5.65	44.30

Segment Leq : 32.86 dBA

Total Leq All Segments: 54.93 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 62.52
(NIGHT): 54.93

RECEPTOR 1 - ORNAMENT

ORNAMENT Noise Modelling Report

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 1

Road Data, Segment # Mountshannon Drive 1 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 1 (Day)

Road Segment - Angle 1 / Angle 2 :	-89 \ 85
Wood depth :	0 metres
No of House Rows :	0
Surface :	1 (Absorptive ground surface)
Receiver Source Distance :	15.3
Receiver Height :	4.5
Topography :	1 (Flat Slope; No Barrier)
Source Elevation :	92
Receiver Elevation :	92.76
Reference Angle :	0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 1

Road Data, Segment # Mountshannon Drive 2 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 40 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Mountshannon Drive 2 (Day)

Road Segment - Angle 1 / Angle 2 : 14 \ 19
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 160.16
Receiver Height : 4.5
Topography : 1 (Flat Slope; No Barrier)
Source Elevation : 92
Receiver Elevation : 92.76
Reference Angle : 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 1

Road Data, Segment # Fallowfield Road (Day)

Car Traffic Volume	: 40480 / 3520	Day / Night
Medium Truck Volume	: 3220 / 280	Day / Night
Heavy Truck Volume	: 2300 / 200	Day / Night
Posted Speed Limit	: 80 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 50000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Fallowfield Road (Day)

Road Segment - Angle 1 / Angle 2	: -45 \ 62
Wood depth	: 0 metres
No of House Rows	: 4, First Row Density of 95 %
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 439.75
Receiver Height	: 4.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -45 \ 62
Barrier Height	: 6
Barrier Receiver Distance	: 66.8
Source Elevation	: 92
Receiver Elevation	: 92.76
Barrier Elevation	: 92
Reference Angle	: 0



Results Segment : Mountshannon Drive 1 (Day)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-89	85	0.57	63.96	0	-0.14	-1.39	0	0	0	62.43

Segment Leq : 62.43 dBA

Results Segment : Mountshannon Drive 2 (Day)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
14	19	0.57	63.96	0	-16.15	-12.64	0	0	0	35.17

Segment Leq : 35.17 dBA

Results Segment : Fallowfield Road (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
1.5	! 4.5	! 2.07	! 94.07

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-45	62	0.57	77.72	0	-23.03	-2.64	0	-11.5	0	40.55
-45	62	0.21	77.72	0	-17.75	-2.41	0	0	-5.51	52.05

Segment Leq : 40.55 dBA

Total Leq From All DAYTIME Road Segments : 62.47 dBA



Results Segment : Mountshannon Drive 1 (Night)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-89	85	0.56999997	56.36	0	-0.14	-1.39	0	0	0	54.83

Segment Leq : 54.83 dBA

Results Segment : Mountshannon Drive 2 (Night)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
14	19	0.56999997	56.36	0	-16.15	-12.64	0	0	0	27.57

Segment Leq : 27.59 dBA

Results Segment : Fallowfield Road (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
1.5	! 4.500001	! 2.07	! 94.07

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-45	62	0.56999997	70.12	0	-23.03	-2.64	0	-11.5	0	32.95
-45	62	0.20999997	70.12	0	-17.75	-2.41	0	0	-5.51	44.45

Segment Leq : 32.95 dBA

Total Leq From All NIGHTTIME Road Segments : 54.87 dBA

Total Leq - FROM ALL SOURCES : DAY: 62.47 dBA
NIGHT: 54.87 dBA

RECEPTOR 27 - STAMSON



STAMSON 5.0 NORMAL REPORT Date: 02-06-2011 10:14:47
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: REC27.te Time Period: Day/Night 16/8 hours
Description: GME11-033 - 146 MOUNTSHANNON - STAMSON CHECK

Road data, segment # 1: Earl Mulliga (day/night)

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: Earl Mulliga (day/night)

Angle1 Angle2 : 64.00 deg 82.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 97.37 / 97.37 m
Receiver height : 9.35 / 9.35 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00



Road data, segment # 2: Mountshan1 (day/night)

Car traffic volume : 6403/557 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 442/38 veh/TimePeriod *
Posted speed limit : 40 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 6.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 2: Mountshan1 (day/night)

Angle1 Angle2 : 0.00 deg 56.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 117.00 / 117.00 m
Receiver height : 9.35 / 9.35 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00



Road data, segment # 3: Mountshan3 (day/night)

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 40 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 3: Mountshan3 (day/night)

Angle1 Angle2 : -46.00 deg 18.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 152.00 / 152.00 m
Receiver height : 9.35 / 9.35 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -26.00 deg Angle2 : 18.00 deg
Barrier height : 4.70 m
Barrier receiver distance : 57.80 / 57.80 m
Source elevation : 92.00 m
Receiver elevation : 92.34 m
Barrier elevation : 92.00 m
Reference angle : 0.00

Road data, segment # 4: Mountshan4 (day/night)

```
-----
Car traffic volume : 6477/563   veh/TimePeriod  *
Medium truck volume : 515/45    veh/TimePeriod  *
Heavy truck volume  : 368/32    veh/TimePeriod  *
Posted speed limit  : 40 km/h
Road gradient       : 0 %
Road pavement      : 1 (Typical asphalt or concrete)
```

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

```
24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth         : 0.00
Number of Years of Growth           : 0.00
Medium Truck % of Total Volume      : 7.00
Heavy Truck % of Total Volume       : 5.00
Day (16 hrs) % of Total Volume     : 92.00
```

Data for Segment # 4: Mountshan4 (day/night)

```
-----
Angle1  Angle2      : 0.00 deg  27.00 deg
Wood depth          : 0          (No woods.)
No of house rows    : 0 / 0
Surface             : 1          (Absorptive ground surface)
Receiver source distance : 159.50 / 159.50 m
Receiver height     : 9.35 / 9.35 m
Topography          : 2          (Flat/gentle slope; with barrier)
Barrier angle1     : 0.00 deg  Angle2 : 27.00 deg
Barrier height     : 4.00 m
Barrier receiver distance : 23.10 / 23.10 m
Source elevation   : 92.00 m
Receiver elevation  : 92.34 m
Barrier elevation   : 92.00 m
Reference angle    : 0.00
```



Road data, segment # 5: Mountshan2 (day/night)

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 40 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 5: Mountshan2 (day/night)

Angle1 Angle2 : -15.00 deg 25.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 199.90 / 199.90 m
Receiver height : 9.35 / 9.35 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 6: Longfields2 (day/night)

```
-----
Car traffic volume : 6477/563   veh/TimePeriod  *
Medium truck volume : 515/45    veh/TimePeriod  *
Heavy truck volume  : 368/32    veh/TimePeriod  *
Posted speed limit  : 50 km/h
Road gradient       : 0 %
Road pavement      : 1 (Typical asphalt or concrete)
```

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

```
24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth       : 0.00
Number of Years of Growth         : 0.00
Medium Truck % of Total Volume    : 7.00
Heavy Truck % of Total Volume     : 5.00
Day (16 hrs) % of Total Volume    : 92.00
```

Data for Segment # 6: Longfields2 (day/night)

```
-----
Angle1  Angle2      : -63.00 deg  -31.00 deg
Wood depth      : 0 (No woods.)
No of house rows : 0 / 0
Surface         : 1 (Absorptive ground surface)
Receiver source distance : 331.00 / 331.00 m
Receiver height  : 9.35 / 9.35 m
Topography      : 2 (Flat/gentle slope; with barrier)
Barrier angle1  : -63.00 deg  Angle2 : -31.00 deg
Barrier height   : 4.00 m
Barrier receiver distance : 44.50 / 44.50 m
Source elevation : 93.00 m
Receiver elevation : 92.34 m
Barrier elevation : 92.00 m
Reference angle  : 0.00
```



Results segment # 1: Earl Mulliga (day)

Source height = 1.50 m

ROAD (0.00 + 41.85 + 0.00) = 41.85 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
64	82	0.42	65.75	0.00	-11.57	-12.33	0.00	0.00	0.00	41.85

Segment Leq : 41.85 dBA

Results segment # 2: Mountshan1 (day)

Source height = 1.57 m

ROAD (0.00 + 46.43 + 0.00) = 46.43 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	56	0.42	64.50	0.00	-12.69	-5.39	0.00	0.00	0.00	46.43

Segment Leq : 46.43 dBA

Results segment # 3: Mountshan3 (day)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	9.35	6.57	98.57

ROAD (39.68 + 43.46 + 0.00) = 44.98 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-46	-26	0.42	63.96	0.00	-14.33	-9.95	0.00	0.00	0.00	39.68
-26	18	0.14	63.96	0.00	-11.49	-6.14	0.00	0.00	0.00	-1.80
44.53*	-26	0.42	63.96	0.00	-14.33	-6.17	0.00	0.00	0.00	43.46

* Bright Zone !

Segment Leq : 44.98 dBA



Results segment # 4: Mountshan4 (day)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	9.35	8.50	100.50

ROAD (0.00 + 41.02 + 0.00) = 41.02 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	27	0.18	63.96	0.00	-12.16	-8.27	0.00	0.00	0.00	0.00
43.52*	0	0.42	63.96	0.00	-14.63	-8.31	0.00	0.00	0.00	41.02

* Bright Zone !

Segment Leq : 41.02 dBA



Results segment # 5: Mountshan2 (day)

Source height = 1.50 m

ROAD (0.00 + 41.36 + 0.00) = 41.36 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-15	25	0.42	63.96	0.00	-16.02	-6.58	0.00	0.00	0.00	41.36

Segment Leq : 41.36 dBA

Results segment # 6: Longfields2 (day)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	9.35	8.72	100.72

ROAD (0.00 + 38.36 + 0.00) = 38.36 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-63	-31	0.18	65.75	0.00	-15.92	-7.83	0.00	0.00	0.00	0.00
42.00*										
-63	-31	0.42	65.75	0.00	-19.14	-8.25	0.00	0.00	0.00	38.36

* Bright Zone !

Segment Leq : 38.36 Dba

Total Leq All Segments: 50.93 dBA



Results segment # 1: Earl Mulliga (night)

Source height = 1.50 m

ROAD (0.00 + 34.26 + 0.00) = 34.26 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
64	82	0.42	58.16	0.00	-11.57	-12.33	0.00	0.00	0.00	34.26

Segment Leq : 34.26 dBA

Results segment # 2: Mountshan1 (night)

Source height = 1.56 m

ROAD (0.00 + 38.80 + 0.00) = 38.80 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	56	0.42	56.88	0.00	-12.69	-5.39	0.00	0.00	0.00	38.80

Segment Leq : 38.80 dBA



Results segment # 3: Mountshan3 (night)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	9.35	6.57	98.57

ROAD (32.09 + 35.87 + 0.00) = 37.39 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-46	-26	0.42	56.36	0.00	-14.33	-9.95	0.00	0.00	0.00	32.09
-26	18	0.14	56.36	0.00	-11.49	-6.14	0.00	0.00	0.00	-1.80
36.94*	-26	18	0.42	56.36	0.00	-14.33	-6.17	0.00	0.00	35.87

* Bright Zone !

Segment Leq : 37.39 dBA



Results segment # 4: Mountshan4 (night)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	9.35	8.50	100.50

ROAD (0.00 + 33.43 + 0.00) = 33.43 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	27	0.18	56.36	0.00	-12.16	-8.27	0.00	0.00	0.00	0.00
35.93*										
0	27	0.42	56.36	0.00	-14.63	-8.31	0.00	0.00	0.00	33.43

* Bright Zone !

Segment Leq : 33.43 dBA



Results segment # 5: Mountshan2 (night)

Source height = 1.50 m

ROAD (0.00 + 33.76 + 0.00) = 33.76 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-15	25	0.42	56.36	0.00	-16.02	-6.58	0.00	0.00	0.00	33.76

Segment Leq : 33.76 dBA

Results segment # 6: Longfields2 (night)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	9.35	8.72	100.72

ROAD (0.00 + 30.77 + 0.00) = 30.77 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-63	-31	0.18	58.16	0.00	-15.92	-7.83	0.00	0.00	0.00	0.00
34.41*										
-63	-31	0.42	58.16	0.00	-19.14	-8.25	0.00	0.00	0.00	30.77

* Bright Zone !

Segment Leq : 30.77 dBA

Total Leq All Segments: 43.33 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 50.93
(NIGHT): 43.33

RECEPTOR 27 - ORNAMENT



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 27

Road Data, Segment # Earl Mulligan Drive (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 50 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Earl Mulligan Drive (Day)

Road Segment - Angle 1 / Angle 2 : 64 \ 82
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 97.37
Receiver Height : 9.3486
Topography : 1 (Flat Slope; No Barrier)
Source Elevation : 92
Receiver Elevation : 92.34
Reference Angle : 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 27

Road Data, Segment # Mountshannon Drive 1 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 1 (Day)

Road Segment - Angle 1 / Angle 2	: 0 \ 56
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 117.01
Receiver Height	: 9.3486
Topography	: 1 (Flat Slope; No Barrier)
Source Elevation	: 92
Receiver Elevation	: 92.34
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 27

Road Data, Segment # Mountshannon Drive 3 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 3 (Day)

Road Segment - Angle 1 / Angle 2	: -46 \ 18
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 151.99
Receiver Height	: 9.3486
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -26 \ 18
Barrier Height	: 4.7
Barrier Receiver Distance	: 57.8
Source Elevation	: 92
Receiver Elevation	: 92.34
Barrier Elevation	: 92
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 27

Road Data, Segment # Mountshannon Drive 4 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 4 (Day)

Road Segment - Angle 1 / Angle 2	: 0 \ 27
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 159.49
Receiver Height	: 9.3486
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 0 \ 27
Barrier Height	: 4
Barrier Receiver Distance	: 23.1
Source Elevation	: 92
Receiver Elevation	: 92.34
Barrier Elevation	: 92
Reference Angle	: 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 27

Road Data, Segment # Mountshannon Drive 2 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 40 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Mountshannon Drive 2 (Day)

Road Segment - Angle 1 / Angle 2 : -15 \ 25
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 199.88
Receiver Height : 9.3486
Topography : 1 (Flat Slope; No Barrier)
Source Elevation : 92
Receiver Elevation : 92.34
Reference Angle : 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 27

Road Data, Segment # Longfields Drive 2 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Longfields Drive 2 (Day)

Road Segment - Angle 1 / Angle 2	: -63 \ -31
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 330.99
Receiver Height	: 9.3486
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -63 \ -31
Barrier Height	: 4
Barrier Receiver Distance	: 44.5
Source Elevation	: 93
Receiver Elevation	: 92.34
Barrier Elevation	: 92
Reference Angle	: 0

Results Segment : Earl Mulligan Drive (Day)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
64	82	0.424542		65.75	0	-11.57	-12.38	0	0	41.8

Segment Leq : 41.8 dBA

Results Segment : Mountshannon Drive 1 (Day)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	56	0.424542		63.96	0	-12.71	-5.42	0	0	45.83

Segment Leq : 45.83 dBA

Results Segment : Mountshannon Drive 3 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
1.5	! 9.3486	! 4.61	! 96.61

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-46	-26	0.424542		63.96	0	-14.33	-10.22	0	0	39.41
-26	18	0.424542		63.96	0	-14.33	-6.4	0	0	43.23

Segment Leq : 44.74 dBA



Results Segment : Mountshannon Drive 4 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.5	9.3486	2.69	94.69

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	27	0.424542		63.96	0	-14.62	-8.36	0	0	40.98

Segment Leq : 40.98 dBA

Results Segment : Mountshannon Drive 2 (Day)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-15	25	0.424542		63.96	0	-16.02	-6.6	0	0	41.34

Segment Leq : 41.34 dBA

Results Segment : Longfields Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.5	9.3486	3.47	95.47

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-63	-31	0.424542		65.75	0	-19.14	-8.39	0	0	38.22

Segment Leq : 38.22 dBA

Total Leq From All DAYTIME Road Segments : 50.64 dBA

Results Segment : Earl Mulligan Drive (Night)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
64	82	0.4245417		58.15	0	-11.57	-12.38	0	0	0	34.2

Segment Leq : 34.2 dBA

Results Segment : Mountshannon Drive 1 (Night)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
0	56	0.4245417		56.36	0	-12.71	-5.42	0	0	0	38.23

Segment Leq : 38.23 dBA

Results Segment : Mountshannon Drive 3 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
1.5	! 9.34861	! 4.61	! 96.61

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
-46	-26	0.4245417		56.36	0	-14.33	-10.22	0	0	0	31.81
-26	18	0.4245417		56.36	0	-14.33	-6.4	0	0	0	35.63

Segment Leq : 37.14 dBA



Results Segment : Mountshannon Drive 4 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.5	9.34861	2.69	94.69

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	27	0.4245417	56.36	0	-14.62	-8.36	0	0	0	33.38

Segment Leq : 33.38 dBA

Results Segment : Mountshannon Drive 2 (Night)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-15	25	0.4245417	56.36	0	-16.02	-6.6	0	0	0	33.74

Segment Leq : 33.74 dBA

Results Segment : Longfields Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.5	9.34861	3.47	95.47

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-63	-31	0.4245417	58.15	0	-19.14	-8.39	0	0	0	30.62

Segment Leq : 30.63 dBA

Total Leq From All NIGHTTIME Road Segments : 43.05 dBA

Total Leq - FROM ALL SOURCES : DAY: 50.64 dBA
NIGHT: 43.06 dBA

COMPARISON OF RESULTS

TABLE A1 – COMPARISON OF SEGMENT RESULTS BETWEEN STAMSON AND ORNAMENT

RECEPTOR 1	DAY		Δ	NIGHT		Δ
	STAMSON	ORNAMENT		STAMSON	ORNAMENT	
Mountshannon Drive 1	62.49	62.43	0.06	54.9	54.83	0.07
Mountshannon Drive 2	32.14	35.17	-3.03	24.54	27.59	-3.05
Fallowfield Road	40.45	40.55	-0.1	32.86	32.95	-0.09
TOTAL OF ALL SEGMENTS	62.52	62.47	0.05	54.93	54.87	0.06

RECEPTOR 27	DAY		Δ	NIGHT		Δ
	STAMSON	ORNAMENT		STAMSON	ORNAMENT	
Earl Mulligan Drive	41.85	41.8	0.05	34.26	34.2	0.06
Mountshannon Drive 1	46.43	45.83	0.6	38.8	38.23	0.57
Mountshannon Drive 3	44.98	44.74	0.24	37.39	37.14	0.25
Mountshannon Drive 4	41.02	40.98	0.04	33.43	33.38	0.05
Mountshannon Drive 2	41.36	41.34	0.02	33.76	33.74	0.02
Longfields Drive 2	38.36	38.22	0.14	30.77	30.63	0.14
	50.93	50.64	0.29	43.33	43.04	0.29

The results of the comparison indicate that the two models produce similar results. Only one road segment had a Delta value (Δ) greater than ± 1 dB (ie. Segment 2 on receptor 1); which given the circumstances was considered to be acceptable for this analysis.

The reason for the deviation was due to the Finite Segment (F,Adj) adjustment on the “Mountshannon Drive 2” segment. For segment angles of Angle1 = “14” and Angle2 = “19”, STAMSON produced a F.Adj. value of “-15.67 dB” as a result of internal calculations specified in section 5.7.2 of the ORNAMENT technical document. The ORNAMENT Model method on the other hand produced a F.Adj. value of “-12.64 dB” as a result of a look-up function using Tables 11.3 and 11.4 in the ORNAMENT technical document. The deviation lies in the size of the segment where interpolation was not possible due to the limitations of the table. These tables are approximate values of the adjustments for finite segments, unlike the equations used by STAMSON. Given the small variation of the overall results and the conservative nature of the deviation, the values produced by *GmE*'s ORNAMENT Model were considered to be sufficient for this analysis.

APPENDIX B

ROADWAY NOISE MODELLING RESULTS
ORNAMENT INPUT & OUTPUT DATA

ORNAMENT Noise Modelling Report

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 1

Road Data, Segment # Mountshannon Drive 1 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 1 (Day)

Road Segment - Angle 1 / Angle 2 :	-89 \ 85
Wood depth :	0 metres
No of House Rows :	0
Surface :	1 (Absorptive ground surface)
Receiver Source Distance :	15.3
Receiver Height :	4.5
Topography :	1 (Flat Slope; No Barrier)
Source Elevation :	92
Receiver Elevation :	92.76
Reference Angle :	0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 1

Road Data, Segment # Mountshannon Drive 2 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 2 (Day)

Road Segment - Angle 1 / Angle 2	: 14 \ 19
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 160.16
Receiver Height	: 4.5
Topography	: 1 (Flat Slope; No Barrier)
Source Elevation	: 92
Receiver Elevation	: 92.76
Reference Angle	: 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 1

Road Data, Segment # Fallowfield Road (Day)

Car Traffic Volume : 40480 / 3520 Day / Night
Medium Truck Volume : 3220 / 280 Day / Night
Heavy Truck Volume : 2300 / 200 Day / Night
Posted Speed Limit : 80 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 50000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Fallowfield Road (Day)

Road Segment - Angle 1 / Angle 2 : -45 \ 62
Wood depth : 0 metres
No of House Rows : 4, First Row Density of 95 %
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 439.75
Receiver Height : 4.5
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : -45 \ 62
Barrier Height : 6
Barrier Receiver Distance : 66.8
Source Elevation : 92
Receiver Elevation : 92.76
Barrier Elevation : 92
Reference Angle : 0



Results Segment : Mountshannon Drive 1 (Day)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-89	85	0.57	63.96	0	-0.14	-1.39	0	0	0	62.43

Segment Leq : 62.43 dBA

Results Segment : Mountshannon Drive 2 (Day)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
14	19	0.57	63.96	0	-16.15	-12.64	0	0	0	35.17

Segment Leq : 35.17 dBA

Results Segment : Fallowfield Road (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
1.5	! 4.5	! 2.07	! 94.07

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-45	62	0.57	77.72	0	-23.03	-2.64	0	-11.5	0	40.55
-45	62	0.21	77.72	0	-17.75	-2.41	0	0	-5.51	52.05

Segment Leq : 40.55 dBA

Total Leq From All DAYTIME Road Segments : 62.47 dBA



Results Segment : Mountshannon Drive 1 (Night)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-89	85	0.56999997	56.36	0	-0.14	-1.39	0	0	0	54.83

Segment Leq : 54.83 dBA

Results Segment : Mountshannon Drive 2 (Night)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
14	19	0.56999997	56.36	0	-16.15	-12.64	0	0	0	27.57

Segment Leq : 27.59 dBA

Results Segment : Fallowfield Road (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
1.5	! 4.500001	! 2.07	! 94.07

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-45	62	0.56999997	70.12	0	-23.03	-2.64	0	-11.5	0	32.95
-45	62	0.20999997	70.12	0	-17.75	-2.41	0	0	-5.51	44.45

Segment Leq : 32.95 dBA

Total Leq From All NIGHTTIME Road Segments : 54.87 dBA

Total Leq - FROM ALL SOURCES : DAY: 62.47 dBA
NIGHT: 54.87 dBA



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 2

Road Data, Segment # Earl Mulligan Drive (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 50 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Earl Mulligan Drive (Day)

Road Segment - Angle 1 / Angle 2 : 84 \ 88
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 23.61
Receiver Height : 1.5
Topography : 1 (Flat Slope; No Barrier)
Source Elevation : 0
Receiver Elevation : 91.9
Reference Angle : 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 2

Road Data, Segment # Mountshannon Drive 1 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 1 (Day)

Road Segment - Angle 1 / Angle 2	: -87 \ 78
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 34.6
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -87 \ 46
Barrier Height	: 10
Barrier Receiver Distance	: 3
Source Elevation	: 92
Receiver Elevation	: 91.9
Barrier Elevation	: 91.9
Reference Angle	: 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 2

Road Data, Segment # Mountshannon Drive 5 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 40 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Mountshannon Drive 5 (Day)

Road Segment - Angle 1 / Angle 2 : 56 \ 69
Wood depth : 0 metres
No of House Rows : 2, First Row Density of 90 %
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 145.3
Receiver Height : 1.5
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : 56 \ 69
Barrier Height : 16
Barrier Receiver Distance : 23.4178
Source Elevation : 92
Receiver Elevation : 91.9
Barrier Elevation : 92.3
Reference Angle : 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 2

Road Data, Segment # Mountshannon Drive 2 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 40 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Mountshannon Drive 2 (Day)

Road Segment - Angle 1 / Angle 2 : 8 \ 45
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 166.9
Receiver Height : 1.5
Topography : 1 (Flat Slope; No Barrier)
Source Elevation : 92
Receiver Elevation : 91.9
Reference Angle : 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 2

Road Data, Segment # Mountshannon Drive 3 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 3 (Day)

Road Segment - Angle 1 / Angle 2	: -26 \ 26
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 213.19
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 4 \ 26
Barrier Height	: 4.7
Barrier Receiver Distance	: 154
Source Elevation	: 92
Receiver Elevation	: 91.9
Barrier Elevation	: 92
Reference Angle	: 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 2

Road Data, Segment # Mountshannon Drive 4 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 40 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Mountshannon Drive 4 (Day)

Road Segment - Angle 1 / Angle 2 : 0 \ 25
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 236.54
Receiver Height : 1.5
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : 0 \ 25
Barrier Height : 4
Barrier Receiver Distance : 119.7
Source Elevation : 92
Receiver Elevation : 91.9
Barrier Elevation : 92
Reference Angle : 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 2

Road Data, Segment # Longfields Drive 1 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Longfields Drive 1 (Day)

Road Segment - Angle 1 / Angle 2	: 49 \ 61
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 323.46
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 49 \ 61
Barrier Height	: 16
Barrier Receiver Distance	: 12.28
Source Elevation	: 93
Receiver Elevation	: 91.9
Barrier Elevation	: 92
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 2

Road Data, Segment # Longfields Drive 2 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Longfields Drive 2 (Day)

Road Segment - Angle 1 / Angle 2	: -60 \ 35
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 404.75
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -60 \ 35
Barrier Height	: 7
Barrier Receiver Distance	: 85.5
Source Elevation	: 93
Receiver Elevation	: 91.9
Barrier Elevation	: 92
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 2

Road Data, Segment # Fallowfield Road (Day)

Car Traffic Volume	: 40480 / 3520	Day / Night
Medium Truck Volume	: 3220 / 280	Day / Night
Heavy Truck Volume	: 2300 / 200	Day / Night
Posted Speed Limit	: 80 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 50000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Fallowfield Road (Day)

Road Segment - Angle 1 / Angle 2	: -45 \ 61
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 456.44
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -45 \ 15
Barrier Height	: 10
Barrier Receiver Distance	: 3.5
Source Elevation	: 92
Receiver Elevation	: 91.9
Barrier Elevation	: 91.9
Reference Angle	: 0



Results Segment : Earl Mulligan Drive (Day)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
80	88	0.66	65.75	0	-3.27	-17.8	0	0	0	44.68

Segment Leq : 44.68 dBA

Results Segment : Mountshannon Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
1.5	! 1.5	! 1.59	! 93.49

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-87	46	0.06	63.96	0	-3.85	-0.9	0	0	-19	40.21
46	78	0.66	63.96	0	-6.03	-9.9	0	0	0	48.03

Segment Leq : 48.69 dBA

Results Segment : Mountshannon Drive 5 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
1.5	! 1.5	! 1.18	! 93.48

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
56	69	0.66	63.96	0	-16.37	-12.8	0	-8.6	0	26.19
56	69	0	63.96	0	-9.86	-11.52	0	0	-18.04	24.54

Segment Leq : 24.57 dBA

Results Segment : Mountshannon Drive 2 (Day)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
8	45	0.66	63.96	0	-17.37	-7.2	0	0	0	39.39

Segment Leq : 39.39 dBA

Results Segment : Mountshannon Drive 3 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
1.5	! 1.5	! 1.43	! 93.43

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-26	4	0.66	63.96	0	-19.13	-8	0	0	0	36.83
4	26	0.378	63.96	0	-15.88	-9.7	0	0	-9.31	29.07

Segment Leq : 37.5 dBA

Results Segment : Mountshannon Drive 4 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
1.5	! 1.5	! 1.45	! 93.45

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	25	0.42	63.96	0	-17.01	-8.76	0	0	-7.07	31.12

Segment Leq : 31.13 dBA

Results Segment : Longfields Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.5	2.46	94.46
-----	-----	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
49	61	0	65.75	0	-13.34	-11.88	0	0	-20	20.53

Segment Leq : 20.61 dBA

Results Segment : Longfields Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.5	2.27	94.27
-----	-----	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-60	35	0.24	65.75	0	-17.75	-2.84	0	0	-9.62	35.54

Segment Leq : 35.54 dBA

Results Segment : Fallowfield Road (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.5	1.6	93.5
-----	-----	-----	------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-45	15	0.06	77.72	0	-15.72	-2.88	0	0	-20	39.12
-----	----	------	-------	---	--------	-------	---	---	-----	-------

15	61	0.66	77.72	0	-24.62	-6.5	0	0	0	46.6
----	----	------	-------	---	--------	------	---	---	---	------

Segment Leq : 47.31 dBA

Total Leq From All DAYTIME Road Segments : 52.47 dBA



Results Segment : Earl Mulligan Drive (Night)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
80	88	0.57	58.15	0	-3.09	-16.96	0	0	0	38.1

Segment Leq : 38.1 dBA

Results Segment : Mountshannon Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
1.5	! 4.5	! 1.85	! 93.75

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-87	46	0	56.36	0	-3.63	-1.45	0	0	-18.47	32.81

Segment Leq : 41.65 dBA

Results Segment : Mountshannon Drive 5 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
1.5	! 4.5	! 1.67	! 93.97

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
56	69	0.57	56.36	0	-15.48	-12.52	0	-8.6	0	19.76
56	69	0	56.36	0	-9.86	-11.52	0	0	-18	16.98

Segment Leq : 17.15 dBA

Results Segment : Mountshannon Drive 2 (Night)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
8	45	0.57	56.36	0	-16.43	-7.14	0	0	0	32.79

Segment Leq : 32.79 dBA

Results Segment : Mountshannon Drive 3 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
1.5	! 4.5	! 3.59	! 95.59

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-26	4	0.57	56.36	0	-18.1	-8	0	0	0	30.26
4	26	0.288	56.36	0	-14.85	-9.7	0	0	-7.59	24.22

Segment Leq : 31.23 dBA

Results Segment : Mountshannon Drive 4 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
1.5	! 4.5	! 2.97	! 94.97

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	25	0.33	56.36	0	-15.93	-8.72	0	0	-5.32	26.39

Segment Leq : 26.41 dBA



Results Segment : Longfields Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)

1.5 ! 4.5 ! 2.57 ! 94.57

Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

49 61 0 58.15 0 -13.34 -11.88 0 0 -19.85 13.08

Segment Leq : 13.49 dBA

Results Segment : Longfields Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)

1.5 ! 4.5 ! 2.9 ! 94.9

Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

-60 35 0.15 58.15 0 -16.46 -2.75 0 0 -7.05 31.89

Segment Leq : 31.9 dBA



Results Segment : Fallowfield Road (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
-------------------	-----------------------	----------------------	--------------------------------

1.5	! 4.5	! 1.62	! 93.52
-----	-------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-45	15	0	70.12	0	-14.83	-4.8	0	0	-20	30.49
-----	----	---	-------	---	--------	------	---	---	-----	-------

Segment Leq : 40.86 dBA

Total Leq From All NIGHTTIME Road Segments : 45.86 dBA

Total Leq - FROM ALL SOURCES : DAY: 52.47 dBA
 NIGHT: 45.86 dBA

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 3

Road Data, Segment # Earl Mulligan Drive (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Earl Mulligan Drive (Day)

Road Segment - Angle 1 / Angle 2	: 79 \ 87
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 43.79
Receiver Height	: 3.2018
Topography	: 1 (Flat Slope; No Barrier)
Source Elevation	: 92
Receiver Elevation	: 92.3
Reference Angle	: 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 3

Road Data, Segment # Mountshannon Drive 1 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 40 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Mountshannon Drive 1 (Day)

Road Segment - Angle 1 / Angle 2 : 0 \ 72
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 54.55
Receiver Height : 3.2018
Topography : 1 (Flat Slope; No Barrier)
Source Elevation : 92
Receiver Elevation : 92.3
Reference Angle : 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 3

Road Data, Segment # Mountshannon Drive 2 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 2 (Day)

Road Segment - Angle 1 / Angle 2	: 0 \ 40
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 179.19
Receiver Height	: 3.2018
Topography	: 1 (Flat Slope; No Barrier)
Source Elevation	: 92
Receiver Elevation	: 92.3
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 3

Road Data, Segment # Mountshannon Drive 3 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 3 (Day)

Road Segment - Angle 1 / Angle 2	: -31 \ 24
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 201.22
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -3 \ 24
Barrier Height	: 4.7
Barrier Receiver Distance	: 142
Source Elevation	: 92
Receiver Elevation	: 92.3
Barrier Elevation	: 92
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 3

Road Data, Segment # Mountshannon Drive 4 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 4 (Day)

Road Segment - Angle 1 / Angle 2	: 0 \ 17
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 219.25
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 0 \ 17
Barrier Height	: 4
Barrier Receiver Distance	: 86.9
Source Elevation	: 92
Receiver Elevation	: 92.3
Barrier Elevation	: 92
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 3

Road Data, Segment # Longfields Drive 2 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Longfields Drive 2 (Day)

Road Segment - Angle 1 / Angle 2	: -61 \ -31
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 384.57
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -61 \ -31
Barrier Height	: 4
Barrier Receiver Distance	: 75.2
Source Elevation	: 93
Receiver Elevation	: 92.3
Barrier Elevation	: 92
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 3

Road Data, Segment # Fallowfield Road (Day)

Car Traffic Volume	: 40480 / 3520	Day / Night
Medium Truck Volume	: 3220 / 280	Day / Night
Heavy Truck Volume	: 2300 / 200	Day / Night
Posted Speed Limit	: 80 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 50000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Fallowfield Road (Day)

Road Segment - Angle 1 / Angle 2	: -44 \ 60
Wood depth	: 0 metres
No of House Rows	: 4, First Row Density of 95 %
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 476.58
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -44 \ 60
Barrier Height	: 6
Barrier Receiver Distance	: 92
Source Elevation	: 92
Receiver Elevation	: 92.3
Barrier Elevation	: 92
Reference Angle	: 0



Results Segment : Earl Mulligan Drive (Day)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
79	87	0.608946		65.75	0	-7.49	-14.12	0	0	44.14

Segment Leq : 44.14 dBA

Results Segment : Mountshannon Drive 1 (Day)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	72	0.608946		63.96	0	-9.02	-4.74	0	0	50.2

Segment Leq : 50.2 dBA

Results Segment : Mountshannon Drive 2 (Day)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	40	0.608946		63.96	0	-17.33	-6.77	0	0	39.86

Segment Leq : 39.86 dBA

Results Segment : Mountshannon Drive 3 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.2018	2.91	94.91
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-31	-3	0.608946	63.96	0	-18.14	-8.2	0	0	0	37.62
-3	24	0.326946	63.96	0	-14.96	-8.2	0	0	-8.21	32.59

Segment Leq : 38.81 dBA

Results Segment : Mountshannon Drive 4 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.2018	2.29	94.29
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	17	0.368946	63.96	0	-15.95	-10.5	0	0	-5.53	31.98

Segment Leq : 31.99 dBA

Results Segment : Longfields Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 3.2018	! 2.7	! 94.7
-----	----------	-------	--------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
-61	-31	0.368946		65.75	0	-19.29	-8.5	0	0	-5.13	32.83

Segment Leq : 32.83 dBA

Results Segment : Fallowfield Road (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 3.2018	! 1.89	! 93.89
-----	----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
-44	60	0.608946		77.72	0	-24.17	-2.77	0	-11.4	0	39.38
-44	60	0.248946		77.72	0	-18.76	-2.55	0	0	-6.74	49.67

Segment Leq : 39.38 dBA

Total Leq From All DAYTIME Road Segments : 52.04 dBA



Results Segment : Earl Mulligan Drive (Night)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
79	87	0.6089457	58.15	0	-7.49	-14.12	0	0	0	36.54

Segment Leq : 36.54 dBA

Results Segment : Mountshannon Drive 1 (Night)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	72	0.6089457	56.36	0	-9.02	-4.74	0	0	0	42.6

Segment Leq : 42.6 dBA

Results Segment : Mountshannon Drive 2 (Night)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	40	0.6089457	56.36	0	-17.33	-6.77	0	0	0	32.26

Segment Leq : 32.27 dBA

Results Segment : Mountshannon Drive 3 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.20181	2.91	94.91
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-31	-3	0.6089457	56.36	0	-18.14	-8.2	0	0	0	30.02
-3	24	0.3269457	56.36	0	-14.96	-8.2	0	0	-8.21	24.99

Segment Leq : 31.21 dBA

Results Segment : Mountshannon Drive 4 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.20181	2.29	94.29
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	17	0.3689457	56.36	0	-15.95	-10.5	0	0	-5.53	24.38

Segment Leq : 24.41 dBA

Results Segment : Longfields Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
-------------------	-----------------------	----------------------	--------------------------------

1.5	! 3.20181	! 2.7	! 94.7
-----	-----------	-------	--------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-61	-31	0.3689457		58.15	0	-19.29	-8.5	0	0	-5.13 25.23

Segment Leq : 25.26 dBA

Results Segment : Fallowfield Road (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
-------------------	-----------------------	----------------------	--------------------------------

1.5	! 3.20181	! 1.89	! 93.89
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-44	60	0.6089457		70.12	0	-24.17	-2.77	0	-11.4	0 31.78
-44	60	0.2489457		70.12	0	-18.76	-2.55	0	0	-6.74 42.07

Segment Leq : 31.79 dBA

Total Leq From All NIGHTTIME Road Segments : 44.45 dBA

Total Leq - FROM ALL SOURCES : DAY: 52.04 dBA
NIGHT: 44.45 dBA



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 4

Road Data, Segment # Earl Mulligan Drive (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 50 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Earl Mulligan Drive (Day)

Road Segment - Angle 1 / Angle 2 : 64 \ 82
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 97.37
Receiver Height : 3.2018
Topography : 1 (Flat Slope; No Barrier)
Source Elevation : 92
Receiver Elevation : 92.34
Reference Angle : 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 4

Road Data, Segment # Mountshannon Drive 1 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 1 (Day)

Road Segment - Angle 1 / Angle 2	: 0 \ 56
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 117.01
Receiver Height	: 3.2018
Topography	: 1 (Flat Slope; No Barrier)
Source Elevation	: 92
Receiver Elevation	: 92.34
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 4

Road Data, Segment # Mountshannon Drive 3 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 3 (Day)

Road Segment - Angle 1 / Angle 2	: -46 \ 18
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 151.99
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -26 \ 18
Barrier Height	: 4.7
Barrier Receiver Distance	: 57.8
Source Elevation	: 92
Receiver Elevation	: 92.34
Barrier Elevation	: 92
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 4

Road Data, Segment # Mountshannon Drive 4 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 4 (Day)

Road Segment - Angle 1 / Angle 2	: 0 \ 27
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 159.49
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 0 \ 27
Barrier Height	: 4
Barrier Receiver Distance	: 23.1
Source Elevation	: 92
Receiver Elevation	: 92.34
Barrier Elevation	: 92
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 4

Road Data, Segment # Mountshannon Drive 2 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 2 (Day)

Road Segment - Angle 1 / Angle 2	: -15 \ 25
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 199.88
Receiver Height	: 3.2018
Topography	: 1 (Flat Slope; No Barrier)
Source Elevation	: 92
Receiver Elevation	: 92.34
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 4

Road Data, Segment # Longfields Drive 2 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Longfields Drive 2 (Day)

Road Segment - Angle 1 / Angle 2	: -63 \ -31
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 330.99
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -63 \ -31
Barrier Height	: 4
Barrier Receiver Distance	: 44.5
Source Elevation	: 93
Receiver Elevation	: 92.34
Barrier Elevation	: 92
Reference Angle	: 0

Results Segment : Earl Mulligan Drive (Day)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
64	82	0.608946		65.75	0	-13.07	-13.41	0	0	0	39.27

Segment Leq : 39.27 dBA

Results Segment : Mountshannon Drive 1 (Day)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
0	56	0.608946		63.96	0	-14.35	-5.5	0	0	0	44.11

Segment Leq : 44.11 dBA

Results Segment : Mountshannon Drive 3 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
1.5	! 3.2018	! 2.28	! 94.28

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
-46	-26	0.608946		63.96	0	-16.18	-10.44	0	0	0	37.34
-26	18	0.326946		63.96	0	-13.35	-6.4	0	0	-6.95	37.26

Segment Leq : 40.31 dBA

Results Segment : Mountshannon Drive 4 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.5	3.2018	1.8	93.8

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	27	0.368946		63.96	0	-14.05	-8.33	0	0	-5.48 36.1

Segment Leq : 36.1 dBA

Results Segment : Mountshannon Drive 2 (Day)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-15	25	0.608946		63.96	0	-18.1	-6.67	0	0	0 39.19

Segment Leq : 39.19 dBA

Results Segment : Longfields Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.5	3.2018	2.64	94.64

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-63	-31	0.368946		65.75	0	-18.39	-8.3	0	0	-5.15 33.91

Segment Leq : 33.91 dBA

Total Leq From All DAYTIME Road Segments : 47.77 dBA

Results Segment : Earl Mulligan Drive (Night)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
64	82	0.6089457		58.15	0	-13.07	-13.41	0	0	0	31.67

Segment Leq : 31.68 dBA

Results Segment : Mountshannon Drive 1 (Night)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
0	56	0.6089457		56.36	0	-14.35	-5.5	0	0	0	36.51

Segment Leq : 36.51 dBA

Results Segment : Mountshannon Drive 3 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
1.5	! 3.20181	! 2.28	! 94.28

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
-46	-26	0.6089457		56.36	0	-16.18	-10.44	0	0	0	29.74
-26	18	0.3269457		56.36	0	-13.35	-6.4	0	0	-6.95	29.66

Segment Leq : 32.71 dBA

Results Segment : Mountshannon Drive 4 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
-------------------	-----------------------	----------------------	--------------------------------

1.5	! 3.20181	! 1.8	! 93.8
-----	-----------	-------	--------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	27	0.3689457	56.36	0	-14.05	-8.33	0	0	0	-5.48 28.5

Segment Leq : 28.51 dBA

Results Segment : Mountshannon Drive 2 (Night)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-15	25	0.6089457	56.36	0	-18.1	-6.67	0	0	0	31.59

Segment Leq : 31.6 dBA

Results Segment : Longfields Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
-------------------	-----------------------	----------------------	--------------------------------

1.5	! 3.20181	! 2.64	! 94.64
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-63	-31	0.3689457	58.15	0	-18.39	-8.3	0	0	0	-5.15 26.31

Segment Leq : 26.33 dBA

Total Leq From All NIGHTTIME Road Segments : 40.18 dBA

Total Leq - FROM ALL SOURCES : DAY: 47.77 dBA
NIGHT: 40.19 dBA

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 5

Road Data, Segment # Mountshannon Drive 1 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 1 (Day)

Road Segment - Angle 1 / Angle 2	: -88 \ 87
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 16.65
Receiver Height	: 4.5
Topography	: 1 (Flat Slope; No Barrier)
Source Elevation	: 92
Receiver Elevation	: 92.75
Reference Angle	: 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 5

Road Data, Segment # Mountshannon Drive 2 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 40 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Mountshannon Drive 2 (Day)

Road Segment - Angle 1 / Angle 2 : 17 \ 19
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 295.62
Receiver Height : 4.5
Topography : 1 (Flat Slope; No Barrier)
Source Elevation : 92
Receiver Elevation : 92.75
Reference Angle : 0



Results Segment : Mountshannon Drive 1 (Day)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-88	87	0.57	63.96	0	-0.71	-1.39	0	0	0	61.86

Segment Leq : 61.86 dBA

Results Segment : Mountshannon Drive 2 (Day)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
17	19	0.57	63.96	0	-20.33	-12.64	0	0	0	30.99

Segment Leq : 31 dBA

Total Leq From All DAYTIME Road Segments : 61.86 dBA



Results Segment : Mountshannon Drive 1 (Night)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-88	87	0.56999997	56.36	0	-0.71	-1.39	0	0	0	54.26

Segment Leq : 54.26 dBA

Results Segment : Mountshannon Drive 2 (Night)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
17	19	0.56999997	56.36	0	-20.33	-12.64	0	0	0	23.39

Segment Leq : 23.43 dBA

Total Leq From All NIGHTTIME Road Segments : 54.26 dBA

Total Leq - FROM ALL SOURCES : DAY: 61.86 dBA
NIGHT: 54.26 dBA

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 6

Road Data, Segment # Mountshannon Drive 1 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 1 (Day)

Road Segment - Angle 1 / Angle 2	: -86 \ 83
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 35.95
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -77 \ 83
Barrier Height	: 10
Barrier Receiver Distance	: 3
Source Elevation	: 92
Receiver Elevation	: 92.75
Barrier Elevation	: 92.75
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 6

Road Data, Segment # Earl Mulligan Drive (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Earl Mulligan Drive (Day)

Road Segment - Angle 1 / Angle 2	: 75 \ 84
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 97.26
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 75 \ 84
Barrier Height	: 16
Barrier Receiver Distance	: 9.175
Source Elevation	: 92
Receiver Elevation	: 92.75
Barrier Elevation	: 95.54
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 6

Road Data, Segment # Mountshannon Drive 5 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 5 (Day)

Road Segment - Angle 1 / Angle 2	: 26 \ 48
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 251.71
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 26 \ 48
Barrier Height	: 15
Barrier Receiver Distance	: 9.4662
Source Elevation	: 92
Receiver Elevation	: 92.75
Barrier Elevation	: 95.54
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 6

Road Data, Segment # Mountshannon Drive 4 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 4 (Day)

Road Segment - Angle 1 / Angle 2	: -23 \ 0
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 277.97
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -23 \ 0
Barrier Height	: 15
Barrier Receiver Distance	: 10.4933
Source Elevation	: 92
Receiver Elevation	: 92.75
Barrier Elevation	: 95.54
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 6

Road Data, Segment # Longfields Drive 1 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Longfields Drive 1 (Day)

Road Segment - Angle 1 / Angle 2	: 40 \ 58
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 282.25
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 40 \ 58
Barrier Height	: 7
Barrier Receiver Distance	: 23.5805
Source Elevation	: 93
Receiver Elevation	: 92.75
Barrier Elevation	: 92
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 6

Road Data, Segment # Mountshannon Drive 3 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 3 (Day)

Road Segment - Angle 1 / Angle 2	: -36 \ 0
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 301.06
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -36 \ 0
Barrier Height	: 15
Barrier Receiver Distance	: 12.3832
Source Elevation	: 92
Receiver Elevation	: 92.75
Barrier Elevation	: 95.54
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 6

Road Data, Segment # Mountshannon Drive 2 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 2 (Day)

Road Segment - Angle 1 / Angle 2	: 13 \ 36
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 301.92
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 23 \ 36
Barrier Height	: 16
Barrier Receiver Distance	: 113.9147
Source Elevation	: 92
Receiver Elevation	: 92.75
Barrier Elevation	: 92.3
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 6

Road Data, Segment # Longfields Drive 2 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Longfields Drive 2 (Day)

Road Segment - Angle 1 / Angle 2	: -68 \ 25
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 331.07
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -68 \ 12
Barrier Height	: 15
Barrier Receiver Distance	: 11.2614
Source Elevation	: 93
Receiver Elevation	: 92.75
Barrier Elevation	: 92.59
Reference Angle	: 0

Results Segment : Mountshannon Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.5	0.81	93.56
-----	-----	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-86	-77	0.66	63.96	0	-6.3	-13.5	0	0	0	44.16
-----	-----	------	-------	---	------	-------	---	---	---	-------

-77	83	0.06	63.96	0	-4.02	-0.42	0	0	-20	39.52
-----	----	------	-------	---	-------	-------	---	---	-----	-------

Segment Leq : 45.44 dBA

Results Segment : Earl Mulligan Drive (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.5	0	95.54
-----	-----	---	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

75	84	0	65.75	0	-8.12	-13.2	0	0	-18.11	26.32
----	----	---	-------	---	-------	-------	---	---	--------	-------

Segment Leq : 26.34 dBA

Results Segment : Mountshannon Drive 5 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.5	0	95.54
-----	-----	---	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
26	48	0	63.96	0	-12.25	-9.14	0	0	-20	22.57

Segment Leq : 22.62 dBA

Results Segment : Mountshannon Drive 4 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.5	0	95.54
-----	-----	---	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-23	0	0	63.96	0	-12.68	-8.96	0	0	-20	22.32

Segment Leq : 22.37 dBA

Results Segment : Longfields Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 1.5	! 2.48	! 94.48
-----	-------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
40	58	0.24	65.75	0	-15.8	-10.58	0	0	-12.92	26.45

Segment Leq : 26.47 dBA

Results Segment : Mountshannon Drive 3 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 1.5	! 0	! 95.54
-----	-------	-----	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-36	0	0	63.96	0	-13.03	-6.98	0	0	-20	23.95

Segment Leq : 23.98 dBA

Results Segment : Mountshannon Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 1.5	! 1.48	! 93.78
-----	-------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

13	23	0.66	63.96	0	-21.64	-9.4	0	0	0	32.92
----	----	------	-------	---	--------	------	---	---	---	-------

23	36	0	63.96	0	-13.04	-11.52	0	0	-17.2	22.2
----	----	---	-------	---	--------	--------	---	---	-------	------

Segment Leq : 33.28 dBA

Results Segment : Longfields Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 1.5	! 1.9	! 94.49
-----	-------	-------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-68	12	0	65.75	0	-13.44	-3.5	0	0	-20	28.81
-----	----	---	-------	---	--------	------	---	---	-----	-------

12	25	0.66	65.75	0	-22.31	-9.7	0	0	0	33.74
----	----	------	-------	---	--------	------	---	---	---	-------

Segment Leq : 34.95 dBA

Total Leq From All DAYTIME Road Segments : 46.21 dBA

Results Segment : Mountshannon Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
-------------------	-----------------------	----------------------	--------------------------------

1.5	! 4.5	! 1.06	! 93.81
-----	-------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-86	-77	0.57	56.36	0	-5.96	-12.88	0	0	0	37.52
-----	-----	------	-------	---	-------	--------	---	---	---	-------

-77	83	0	56.36	0	-3.8	-0.5	0	0	-19.53	32.53
-----	----	---	-------	---	------	------	---	---	--------	-------

Segment Leq : 38.72 dBA

Results Segment : Earl Mulligan Drive (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	4.5	0	95.54
-----	-----	---	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
75	84	0	58.15	0	-8.12	-13.2	0	0	-16.56	20.27

Segment Leq : 20.35 dBA

Results Segment : Mountshannon Drive 5 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	4.5	0	95.54
-----	-----	---	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
26	48	0	56.36	0	-12.25	-9.14	0	0	-20	14.97

Segment Leq : 15.24 dBA

Results Segment : Mountshannon Drive 4 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	4.5	0	95.54
-----	-----	---	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-23	0	0	56.36	0	-12.68	-8.96	0	0	-20	14.72

Segment Leq : 15 dBA

Results Segment : Longfields Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	4.5	2.73	94.73
-----	-----	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
40	58	0.15	58.15	0	-14.66	-10.4	0	0	-7.73	25.36

Segment Leq : 25.39 dBA

Results Segment : Mountshannon Drive 3 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	4.5	0	95.54
-----	-----	---	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-36	0	0	56.36	0	-13.03	-6.98	0	0	-20	16.35
-----	---	---	-------	---	--------	-------	---	---	-----	-------

Segment Leq : 16.55 dBA

Results Segment : Mountshannon Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	4.5	2.61	94.91
-----	-----	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

13	23	0.57	56.36	0	-20.47	-9.4	0	0	0	26.49
----	----	------	-------	---	--------	------	---	---	---	-------

23	36	0	56.36	0	-13.04	-11.52	0	0	-16.18	15.62
----	----	---	-------	---	--------	--------	---	---	--------	-------

Segment Leq : 26.84 dBA



Results Segment : Longfields Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
----------------------	----------------------------	---------------------------	-------------------------------------

1.5	! 4.5	! 2	! 94.59
-----	-------	-----	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-68	12	0	58.15	0	-13.44	-3.5	0	0	-20	21.21
-----	----	---	-------	---	--------	------	---	---	-----	-------

Segment Leq : 28.35 dBA

Total Leq From All NIGHTTIME Road Segments : 39.64 dBA

Total Leq - FROM ALL SOURCES : DAY: 46.21 dBA
 NIGHT: 39.65 dBA

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 7

Road Data, Segment # Mountshannon Drive 1 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 1 (Day)

Road Segment - Angle 1 / Angle 2	: -84 \ 75
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 62.31
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -84 \ 75
Barrier Height	: 10
Barrier Receiver Distance	: 30
Source Elevation	: 92
Receiver Elevation	: 92.35
Barrier Elevation	: 91.9
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 7

Road Data, Segment # Mountshannon Drive 2 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 2 (Day)

Road Segment - Angle 1 / Angle 2	: 0 \ 19
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 233.03
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 0 \ 19
Barrier Height	: 16
Barrier Receiver Distance	: 43.6
Source Elevation	: 92
Receiver Elevation	: 92.35
Barrier Elevation	: 92.3
Reference Angle	: 0

Results Segment : Mountshannon Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.2018	2.59	94.49
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-84	75	8.94600000000004E-03	63.96	0	-6.24	-0.06	0	0	0	-17.01 40.65

Segment Leq : 40.65 dBA

Results Segment : Mountshannon Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.2018	1.58	93.88
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	19	0	63.96	0	-11.91	-9.76	0	0	-20	22.29

Segment Leq : 22.34 dBA

Total Leq From All DAYTIME Road Segments : 40.72 dBA

Results Segment : Mountshannon Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.20181	2.59	94.49
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-84	75	8.94569999999995E-03	56.36	0	-6.24	-0.06	0	0	0	-17.01 33.05

Segment Leq : 33.05 dBA

Results Segment : Mountshannon Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.20181	1.58	93.88
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	19	0	56.36	0	-11.91	-9.76	0	0	-20	14.69

Segment Leq : 14.98 dBA

Total Leq From All NIGHTTIME Road Segments : 33.17 dBA

Total Leq - FROM ALL SOURCES : DAY: 40.73 dBA
NIGHT: 33.22 dBA

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 8

Road Data, Segment # Earl Mulligan Drive (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Earl Mulligan Drive (Day)

Road Segment - Angle 1 / Angle 2	: 72 \ 83
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 89.35
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 72 \ 83
Barrier Height	: 16
Barrier Receiver Distance	: 16.2
Source Elevation	: 92
Receiver Elevation	: 92.3
Barrier Elevation	: 92.3
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 8

Road Data, Segment # Mountshannon Drive 5 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 5 (Day)

Road Segment - Angle 1 / Angle 2	: 42 \ 62
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 162.66
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 42 \ 62
Barrier Height	: 16
Barrier Receiver Distance	: 10
Source Elevation	: 92
Receiver Elevation	: 92.3
Barrier Elevation	: 92.3
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 8

Road Data, Segment # Mountshannon Drive 4 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 4 (Day)

Road Segment - Angle 1 / Angle 2	: -13 \ 11
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 214.92
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -13 \ 11
Barrier Height	: 16
Barrier Receiver Distance	: 14
Source Elevation	: 92
Receiver Elevation	: 92.3
Barrier Elevation	: 92.3
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 8

Road Data, Segment # Mountshannon Drive 3 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 3 (Day)

Road Segment - Angle 1 / Angle 2	: -39 \ -9
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 217.87
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -39 \ -9
Barrier Height	: 16
Barrier Receiver Distance	: 60.7
Source Elevation	: 92
Receiver Elevation	: 92.3
Barrier Elevation	: 92.3
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 8

Road Data, Segment # Mountshannon Drive 2 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 2 (Day)

Road Segment - Angle 1 / Angle 2	: 19 \ 32
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 236.88
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Source Elevation	: 92
Receiver Elevation	: 92.3
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 8

Road Data, Segment # Longfields Drive 1 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Longfields Drive 1 (Day)

Road Segment - Angle 1 / Angle 2	: 51 \ 64
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 267.22
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 51 \ 64
Barrier Height	: 15
Barrier Receiver Distance	: 31.4
Source Elevation	: 93
Receiver Elevation	: 92.3
Barrier Elevation	: 92.3
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 8

Road Data, Segment # Longfields Drive 2 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Longfields Drive 2 (Day)

Road Segment - Angle 1 / Angle 2	: -65 \ 24
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 339.01
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -65 \ 24
Barrier Height	: 16
Barrier Receiver Distance	: 15.5
Source Elevation	: 93
Receiver Elevation	: 92.3
Barrier Elevation	: 92.6
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 8

Road Data, Segment # Mountshannon Drive 3 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 3 (Day)

Road Segment - Angle 1 / Angle 2	: -9 \ 8
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 217.87
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -9 \ 8
Barrier Height	: 16
Barrier Receiver Distance	: 17
Source Elevation	: 92
Receiver Elevation	: 92.3
Barrier Elevation	: 92.3
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 8

Road Data, Segment # Longfields Drive 2 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Longfields Drive 2 (Day)

Road Segment - Angle 1 / Angle 2	: 24 \ 36
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 339.01
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 24 \ 36
Barrier Height	: 15
Barrier Receiver Distance	: 59.5
Source Elevation	: 93
Receiver Elevation	: 92.3
Barrier Elevation	: 92.6
Reference Angle	: 0

Results Segment : Earl Mulligan Drive (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 3.2018	! 1.56	! 93.86
-----	----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

72	83	0	65.75	0	-7.75	-12.24	0	0	-15.43	30.33
----	----	---	-------	---	-------	--------	---	---	--------	-------

Segment Leq : 30.34 dBA

Results Segment : Mountshannon Drive 5 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 3.2018	! 1.32	! 93.62
-----	----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

42	62	0	63.96	0	-10.35	-9.5	0	0	-20	24.11
----	----	---	-------	---	--------	------	---	---	-----	-------

Segment Leq : 24.14 dBA

Results Segment : Mountshannon Drive 4 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 3.2018	! 1.33	! 93.63
-----	----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-13	11	0	63.96	0	-11.56	-8.78	0	0	-20	23.62
-----	----	---	-------	---	--------	-------	---	---	-----	-------

Segment Leq : 23.66 dBA

Results Segment : Mountshannon Drive 3 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 3.2018	! 1.76	! 94.06
-----	----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-39	-9	0	63.96	0	-11.62	-7.8	0	0	-20	24.54
-----	----	---	-------	---	--------	------	---	---	-----	-------

Segment Leq : 24.57 dBA



Results Segment : Mountshannon Drive 2 (Day)

Source Height : m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	32	0.608946	63.96	0	-19.28	-7.7	0	0	0	36.98

Segment Leq : 36.98 dBA

Results Segment : Longfields Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
1.5	! 3.2018	! 2.32	! 94.62

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
51	64	0	65.75	0	-12.51	-11.52	0	0	-16.62	25.1

Segment Leq : 25.13 dBA

Results Segment : Longfields Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
1.5	! 3.2018	! 1.95	! 94.55

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-65	24	0	65.75	0	-13.54	-3	0	0	-20	29.21

Segment Leq : 29.22 dBA

Results Segment : Mountshannon Drive 3 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.2018	1.36	93.66
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-9	8	0	63.96	0	-11.62	-10.28	0	0	-20	22.06

Segment Leq : 22.11 dBA

Results Segment : Longfields Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.2018	2.08	94.68
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
24	36	0	65.75	0	-13.54	-11.88	0	0	-17.45	22.88

Segment Leq : 22.92 dBA

Total Leq From All DAYTIME Road Segments : 39.23 dBA

Results Segment : Earl Mulligan Drive (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.20181	1.56	93.86
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
72	83	0	58.15	0	-7.75	-12.24	0	0	-15.43	22.73

Segment Leq : 22.78 dBA

Results Segment : Mountshannon Drive 5 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.20181	1.32	93.62
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
42	62	0	56.36	0	-10.35	-9.5	0	0	-20	16.51

Segment Leq : 16.7 dBA

Results Segment : Mountshannon Drive 4 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 3.20181	! 1.33	! 93.63
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-13	11	0	56.36	0	-11.56	-8.78	0	0	-20	16.02
-----	----	---	-------	---	--------	-------	---	---	-----	-------

Segment Leq : 16.23 dBA

Results Segment : Mountshannon Drive 3 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 3.20181	! 1.76	! 94.06
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-39	-9	0	56.36	0	-11.62	-7.8	0	0	-20	16.94
-----	----	---	-------	---	--------	------	---	---	-----	-------

Segment Leq : 17.11 dBA

Results Segment : Longfields Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.20181	2.32	94.62
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

51	64	0	58.15	0	-12.51	-11.52	0	0	-16.62	17.5
----	----	---	-------	---	--------	--------	---	---	--------	------

Segment Leq : 17.65 dBA

Results Segment : Longfields Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.20181	1.95	94.55
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-65	24	0	58.15	0	-13.54	-3	0	0	-20	21.61
-----	----	---	-------	---	--------	----	---	---	-----	-------

Segment Leq : 21.67 dBA

Results Segment : Mountshannon Drive 3 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.20181	1.36	93.66
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-9	8	0	56.36	0	-11.62	-10.28	0	0	-20	14.46

Segment Leq : 14.76 dBA

Results Segment : Longfields Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.20181	2.08	94.68
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
24	36	0	58.15	0	-13.54	-11.88	0	0	-17.45	15.28

Segment Leq : 15.53 dBA

Total Leq From All NIGHTTIME Road Segments : 31.72 dBA

Total Leq - FROM ALL SOURCES : DAY: 39.24 dBA
NIGHT: 31.79 dBA

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 9

Road Data, Segment # Earl Mulligan Drive (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Earl Mulligan Drive (Day)

Road Segment - Angle 1 / Angle 2	: 66 \ 81
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 113.02
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 66 \ 81
Barrier Height	: 16
Barrier Receiver Distance	: 16.8
Source Elevation	: 92
Receiver Elevation	: 92.35
Barrier Elevation	: 92.3
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 9

Road Data, Segment # Mountshannon Drive 5 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 5 (Day)

Road Segment - Angle 1 / Angle 2	: 41 \ 63
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 145.04
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 41 \ 63
Barrier Height	: 16
Barrier Receiver Distance	: 20.6
Source Elevation	: 92
Receiver Elevation	: 92.35
Barrier Elevation	: 92.3
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 9

Road Data, Segment # Mountshannon Drive 4 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 4 (Day)

Road Segment - Angle 1 / Angle 2	: -17 \ 10
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 189.12
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -11 \ 10
Barrier Height	: 16
Barrier Receiver Distance	: 27.9
Source Elevation	: 92
Receiver Elevation	: 92.35
Barrier Elevation	: 92.3
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 9

Road Data, Segment # Mountshannon Drive 3 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 3 (Day)

Road Segment - Angle 1 / Angle 2	: -45 \ -26
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 196.86
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -45 \ -26
Barrier Height	: 16
Barrier Receiver Distance	: 40.4
Source Elevation	: 92
Receiver Elevation	: 92.35
Barrier Elevation	: 92.3
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 9

Road Data, Segment # Longfields Drive 1 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Longfields Drive 1 (Day)

Road Segment - Angle 1 / Angle 2	: 54 \ 66
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 240.98
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 54 \ 66
Barrier Height	: 15
Barrier Receiver Distance	: 29
Source Elevation	: 93
Receiver Elevation	: 92.35
Barrier Elevation	: 92.6
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 9

Road Data, Segment # Mountshannon Drive 2 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 2 (Day)

Road Segment - Angle 1 / Angle 2	: 19 \ 27
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 246.53
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 19 \ 27
Barrier Height	: 16
Barrier Receiver Distance	: 38.4
Source Elevation	: 92
Receiver Elevation	: 92.35
Barrier Elevation	: 92.3
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 9

Road Data, Segment # Longfields Drive 2 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Longfields Drive 2 (Day)

Road Segment - Angle 1 / Angle 2	: -66 \ 5
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 315.34
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -66 \ 5
Barrier Height	: 16
Barrier Receiver Distance	: 29.66
Source Elevation	: 93
Receiver Elevation	: 92.35
Barrier Elevation	: 92.3
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 9

Road Data, Segment # Mountshannon Drive 3 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 3 (Day)

Road Segment - Angle 1 / Angle 2	: -26 \ 0
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 196.86
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -26 \ 0
Barrier Height	: 4
Barrier Receiver Distance	: 61.1
Source Elevation	: 92
Receiver Elevation	: 92.35
Barrier Elevation	: 92
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 9

Road Data, Segment # Longfields Drive 2 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Longfields Drive 2 (Day)

Road Segment - Angle 1 / Angle 2	: 5 \ 40
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 315.34
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 5 \ 40
Barrier Height	: 15
Barrier Receiver Distance	: 66.1
Source Elevation	: 93
Receiver Elevation	: 92.35
Barrier Elevation	: 92.65
Reference Angle	: 0

Results Segment : Earl Mulligan Drive (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.2018	1.5	93.8
-----	--------	-----	------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

66	81	0	65.75	0	-8.77	-10.8	0	0	-17.14	29.04
----	----	---	-------	---	-------	-------	---	---	--------	-------

Segment Leq : 29.05 dBA

Results Segment : Mountshannon Drive 5 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.2018	1.49	93.79
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

41	63	0	63.96	0	-9.85	-9.14	0	0	-19.61	25.36
----	----	---	-------	---	-------	-------	---	---	--------	-------

Segment Leq : 25.39 dBA

Results Segment : Mountshannon Drive 4 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.2018	1.5	93.8
-----	--------	-----	------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
-17	-11	0.608946		63.96	0	-17.71	-12.67	0	0	0	33.58
-11	10	0	63.96	0	-11.01	-9.32	0	0	-20	23.63	

Segment Leq : 34 dBA

Results Segment : Mountshannon Drive 3 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.2018	1.62	93.92
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-45	-26	0	63.96	0	-11.18	-9.76	0	0	-20	23.02

Segment Leq : 23.06 dBA

Results Segment : Longfields Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 3.2018	! 2.03	! 94.63
-----	----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

54	66	0	65.75	0	-12.06	-11.88	0	0	-17.08	24.73
----	----	---	-------	---	--------	--------	---	---	--------	-------

Segment Leq : 24.76 dBA

Results Segment : Mountshannon Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 3.2018	! 1.52	! 93.82
-----	----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

19	27	0	63.96	0	-12.16	-13.8	0	0	-18.75	19.25
----	----	---	-------	---	--------	-------	---	---	--------	-------

Segment Leq : 19.35 dBA

Results Segment : Longfields Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
-------------------	-----------------------	----------------------	--------------------------------

1.5	! 3.2018	! 2.3	! 94.6
-----	----------	-------	--------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-66	5	0	65.75	0	-13.23	-4.1	0	0	-19.3	29.12
-----	---	---	-------	---	--------	------	---	---	-------	-------

Segment Leq : 29.13 dBA

Results Segment : Mountshannon Drive 3 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
-------------------	-----------------------	----------------------	--------------------------------

1.5	! 3.2018	! 2.14	! 94.14
-----	----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-26	0	0.368946	63.96	0	-15.31	-8.53	0	0	-5.47	34.65
-----	---	----------	-------	---	--------	-------	---	---	-------	-------

Segment Leq : 34.65 dBA

Results Segment : Longfields Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 3.2018	! 2.07	! 94.72
-----	----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

5	40	0	65.75	0	-13.23	-7.1	0	0	-19.2	26.22
---	----	---	-------	---	--------	------	---	---	-------	-------

Segment Leq : 26.24 dBA

Total Leq From All DAYTIME Road Segments : 39.25 dBA

Results Segment : Earl Mulligan Drive (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.20181	1.5	93.8
-----	---------	-----	------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
66	81	0	58.15	0	-8.77	-10.8	0	0	-17.14	21.44

Segment Leq : 21.5 dBA

Results Segment : Mountshannon Drive 5 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.20181	1.49	93.79
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
41	63	0	56.36	0	-9.85	-9.14	0	0	-19.61	17.76

Segment Leq : 17.9 dBA

Results Segment : Mountshannon Drive 4 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.20181	1.5	93.8
-----	---------	-----	------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-17	-11	0.6089457	56.36	0	-17.71	-12.67	0	0	0	25.98
-11	10	0	56.36	0	-11.01	-9.32	0	0	-20	16.03

Segment Leq : 26.41 dBA

Results Segment : Mountshannon Drive 3 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.20181	1.62	93.92
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-45	-26	0	56.36	0	-11.18	-9.76	0	0	-20	15.42

Segment Leq : 15.66 dBA

Results Segment : Longfields Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.20181	2.03	94.63
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

54	66	0	58.15	0	-12.06	-11.88	0	0	-17.08	17.13
----	----	---	-------	---	--------	--------	---	---	--------	-------

Segment Leq : 17.3 dBA

Results Segment : Mountshannon Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.20181	1.52	93.82
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

19	27	0	56.36	0	-12.16	-13.8	0	0	-18.75	11.65
----	----	---	-------	---	--------	-------	---	---	--------	-------

Segment Leq : 12.21 dBA

Results Segment : Longfields Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 3.20181	! 2.3	! 94.6
-----	-----------	-------	--------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-66	5	0	58.15	0	-13.23	-4.1	0	0	-19.3	21.52
-----	---	---	-------	---	--------	------	---	---	-------	-------

Segment Leq : 21.58 dBA

Results Segment : Mountshannon Drive 3 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 3.20181	! 2.14	! 94.14
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-26	0	0.3689457	56.36	0	-15.31	-8.53	0	0	-5.47	27.05
-----	---	-----------	-------	---	--------	-------	---	---	-------	-------

Segment Leq : 27.07 dBA



Results Segment : Longfields Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
-------------------	-----------------------	----------------------	--------------------------------

1.5	! 3.20181	! 2.07	! 94.72
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

5	40	0	58.15	0	-13.23	-7.1	0	0	-19.2	18.62
---	----	---	-------	---	--------	------	---	---	-------	-------

Segment Leq : 18.74 dBA

Total Leq From All NIGHTTIME Road Segments : 31.74 dBA

Total Leq - FROM ALL SOURCES : DAY: 39.26 dBA
 NIGHT: 31.81 dBA

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 10

Road Data, Segment # Mountshannon Drive 5 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 5 (Day)

Road Segment - Angle 1 / Angle 2	: 42 \ 67
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 111.8
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 42 \ 67
Barrier Height	: 6
Barrier Receiver Distance	: 40.9
Source Elevation	: 92
Receiver Elevation	: 92.3
Barrier Elevation	: 92
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 10

Road Data, Segment # Earl Mulligan Drive (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Earl Mulligan Drive (Day)

Road Segment - Angle 1 / Angle 2	: 58 \ 79
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 143.1
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 58 \ 79
Barrier Height	: 4
Barrier Receiver Distance	: 22.9
Source Elevation	: 92
Receiver Elevation	: 92.3
Barrier Elevation	: 92
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 10

Road Data, Segment # Mountshannon Drive 4 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 4 (Day)

Road Segment - Angle 1 / Angle 2	: -22 \ 11
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 148.13
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 1 \ 11
Barrier Height	: 6
Barrier Receiver Distance	: 96.9
Source Elevation	: 92
Receiver Elevation	: 92.3
Barrier Elevation	: 92
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 10

Road Data, Segment # Mountshannon Drive 3 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 3 (Day)

Road Segment - Angle 1 / Angle 2	: -53 \ 0
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 159.87
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -53 \ -7
Barrier Height	: 4
Barrier Receiver Distance	: 44.4
Source Elevation	: 92
Receiver Elevation	: 92.3
Barrier Elevation	: 92
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 10

Road Data, Segment # Longfields Drive 1 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Longfields Drive 1 (Day)

Road Segment - Angle 1 / Angle 2	: 60 \ 70
Wood depth	: 0 metres
No of House Rows	: 5, First Row Density of 95 %
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 204.93
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 60 \ 67
Barrier Height	: 15
Barrier Receiver Distance	: 25.7
Source Elevation	: 93
Receiver Elevation	: 92.3
Barrier Elevation	: 92.52
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 10

Road Data, Segment # Longfields Drive 2 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Longfields Drive 2 (Day)

Road Segment - Angle 1 / Angle 2	: -67 \ 46
Wood depth	: 0 metres
No of House Rows	: 4, First Row Density of 80 %
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 285.26
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -35 \ 32
Barrier Height	: 6
Barrier Receiver Distance	: 70.4
Source Elevation	: 93
Receiver Elevation	: 92.3
Barrier Elevation	: 92
Reference Angle	: 0

Results Segment : Mountshannon Drive 5 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 3.2018	! 2.23	! 94.23
-----	----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
42	67	0.248946		63.96	0	-10.9	-9.97	0	0	-9	34.09

Segment Leq : 34.09 dBA

Results Segment : Earl Mulligan Drive (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 3.2018	! 1.82	! 93.82
-----	----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
58	79	0.368946		65.75	0	-13.41	-11.18	0	0	-5.58	35.58

Segment Leq : 35.58 dBA

Results Segment : Mountshannon Drive 4 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.2018	2.81	94.81
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-22	1	0.608946	63.96	0	-16	-8.4	0	0	0	39.56
1	11	0.248946	63.96	0	-12.42	-11.2	0	0	-10.66	29.68

Segment Leq : 39.99 dBA

Results Segment : Mountshannon Drive 3 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.2018	2.06	94.06
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-53	-7	0.368946	63.96	0	-14.07	-6.07	0	0	-5.58	38.24
-7	0	0.608946	63.96	0	-16.53	-8.8	0	0	0	38.63

Segment Leq : 41.45 dBA

Results Segment : Longfields Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.2018	2.11	94.63
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
60	67	0.608946		65.75	0	-18.27	-14.81	0	-14	0	18.67
60	67	0	65.75	0	-11.36	-14.4	0	0	-16	23.99	
67	70	0.608946		65.75	0	-18.27	-4.44	0	-14	0	29.04

Segment Leq : 29.43 dBA

Results Segment : Longfields Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.2018	2.75	94.75
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
-67	-35	0.608946		65.75	0	-20.58	-9.07	0	-9.5	0	26.6
-35	32	0.608946		65.75	0	-20.58	-4.37	0	-9.5	0	31.3
-35	32	0.248946		65.75	0	-15.98	-4.27	0	0	-7.76	37.74
32	46	0.608946		65.75	0	-20.58	-10.17	0	-9.5	0	25.5

Segment Leq : 33.35 dBA

Total Leq From All DAYTIME Road Segments : 45.21 dBA

Results Segment : Mountshannon Drive 5 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 3.20181	! 2.23	! 94.23
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
42	67	0.2489457	56.36	0	-10.9	-9.97	0	0	0	-9 26.49

Segment Leq : 26.51 dBA

Results Segment : Earl Mulligan Drive (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 3.20181	! 1.82	! 93.82
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
58	79	0.3689457	58.15	0	-13.41	-11.18	0	0	0	-5.58 27.98

Segment Leq : 27.99 dBA

Results Segment : Mountshannon Drive 4 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 3.20181	! 2.81	! 94.81
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-22	1	0.6089457	56.36	0	-16	-8.4	0	0	0	31.96
1	11	0.2489457	56.36	0	-12.42	-11.2	0	0	-10.66	22.08

Segment Leq : 32.39 dBA

Results Segment : Mountshannon Drive 3 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 3.20181	! 2.06	! 94.06
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-53	-7	0.3689457	56.36	0	-14.07	-6.07	0	0	-5.58	30.64

Segment Leq : 33.85 dBA

Results Segment : Longfields Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.20181	2.11	94.63
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
60	67	0.6089457	58.15	0	-18.27	-14.81	0	-14	0	11.07
60	67	0	58.15	0	-11.36	-14.4	0	0	-16	16.39
67	70	0.6089457	58.15	0	-18.27	-4.44	0	-14	0	21.44

Segment Leq : 21.85 dBA

Results Segment : Longfields Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.20181	2.75	94.75
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-67	-35	0.6089457	58.15	0	-20.58	-9.07	0	-9.5	0	19
-35	32	0.6089457	58.15	0	-20.58	-4.37	0	-9.5	0	23.7
-35	32	0.2489457	58.15	0	-15.98	-4.27	0	0	-7.76	30.14
32	46	0.6089457	58.15	0	-20.58	-10.17	0	-9.5	0	17.9

Segment Leq : 25.75 dBA

Total Leq From All NIGHTTIME Road Segments : 37.62 dBA

Total Leq - FROM ALL SOURCES : DAY: 45.21 dBA
NIGHT: 37.64 dBA

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 11

Road Data, Segment # Mountshannon Drive 1 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 1 (Day)

Road Segment - Angle 1 / Angle 2	: -85 \ 81
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 45.32
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -85 \ 39
Barrier Height	: 10
Barrier Receiver Distance	: 12.6
Source Elevation	: 92
Receiver Elevation	: 92.54
Barrier Elevation	: 92.24
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 11

Road Data, Segment # Mountshannon Drive 2 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 2 (Day)

Road Segment - Angle 1 / Angle 2	: 11 \ 35
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 277.07
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 11 \ 13
Barrier Height	: 10
Barrier Receiver Distance	: 114
Source Elevation	: 92
Receiver Elevation	: 92.54
Barrier Elevation	: 91.9
Reference Angle	: 0



Results Segment : Mountshannon Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.5	3.2018	1.88	94.12

1.5 ! 3.2018 ! 1.88 ! 94.12

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-85	39	8.94600000000004E-03	63.96	0	-4.84	-0.17	0	0	0	-18.88 40.07
39	81	0.608946	63.96	0	-7.73	-8.14	0	0	0	48.09

Segment Leq : 48.73 dBA

Results Segment : Mountshannon Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.5	3.2018	2.52	94.42

1.5 ! 3.2018 ! 2.52 ! 94.42

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
11	13	8.94600000000004E-03	63.96	0	-12.78	-1.13	0	0	0	-9.19 40.86
13	35	0.608946	63.96	0	-20.38	-9.9	0	0	0	33.68

Segment Leq : 41.62 dBA

Total Leq From All DAYTIME Road Segments : 49.5 dBA

Results Segment : Mountshannon Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.20181	1.88	94.12
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-85	39	8.9456999999995E-03	56.36	0	-4.84	-0.17	0	0	0	-18.88 32.47

Segment Leq : 41.13 dBA

Results Segment : Mountshannon Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.20181	2.52	94.42
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
11	13	8.9456999999995E-03	56.36	0	-12.78	-1.13	0	0	0	-9.19 33.26

Segment Leq : 34.02 dBA

Total Leq From All NIGHTTIME Road Segments : 41.91 dBA

Total Leq - FROM ALL SOURCES : DAY: 49.5 dBA
NIGHT: 41.92 dBA



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 12

Road Data, Segment # Earl Mulligan Drive (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 50 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Earl Mulligan Drive (Day)

Road Segment - Angle 1 / Angle 2 : 73 \ 83
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 101.48
Receiver Height : 3.2018
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : 73 \ 83
Barrier Height : 16
Barrier Receiver Distance : 10.7
Source Elevation : 92
Receiver Elevation : 92.59
Barrier Elevation : 92.35
Reference Angle : 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 12

Road Data, Segment # Mountshannon Drive 5 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 5 (Day)

Road Segment - Angle 1 / Angle 2	: 30 \ 53
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 214.46
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 30 \ 53
Barrier Height	: 15
Barrier Receiver Distance	: 24.9
Source Elevation	: 92
Receiver Elevation	: 92.59
Barrier Elevation	: 92.6
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 12

Road Data, Segment # Mountshannon Drive 4 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 4 (Day)

Road Segment - Angle 1 / Angle 2	: -21 \ 0
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 247.61
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -21 \ 0
Barrier Height	: 16
Barrier Receiver Distance	: 91.4
Source Elevation	: 92
Receiver Elevation	: 92.59
Barrier Elevation	: 92.3
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 12

Road Data, Segment # Mountshannon Drive 3 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 3 (Day)

Road Segment - Angle 1 / Angle 2	: -38 \ 0
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 264.9
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -38 \ 0
Barrier Height	: 16
Barrier Receiver Distance	: 56.4
Source Elevation	: 92
Receiver Elevation	: 92.59
Barrier Elevation	: 92.35
Reference Angle	: 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 12

Road Data, Segment # Longfields Drive 1 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 50 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Longfields Drive 1 (Day)

Road Segment - Angle 1 / Angle 2 : 45 \ 61
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 269.02
Receiver Height : 3.2018
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : 45 \ 61
Barrier Height : 7
Barrier Receiver Distance : 42.45
Source Elevation : 93
Receiver Elevation : 92.59
Barrier Elevation : 92
Reference Angle : 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 12

Road Data, Segment # Mountshannon Drive 2 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 2 (Day)

Road Segment - Angle 1 / Angle 2	: 21 \ 33
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 281.43
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 21 \ 33
Barrier Height	: 16
Barrier Receiver Distance	: 31.4
Source Elevation	: 92
Receiver Elevation	: 92.59
Barrier Elevation	: 92.35
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 12

Road Data, Segment # Longfields Drive 2 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Longfields Drive 2 (Day)

Road Segment - Angle 1 / Angle 2	: -67 \ 31
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 326.86
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -54 \ 24
Barrier Height	: 15
Barrier Receiver Distance	: 32.3
Source Elevation	: 93
Receiver Elevation	: 92.59
Barrier Elevation	: 92.65
Reference Angle	: 0

Results Segment : Earl Mulligan Drive (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.2018	1.39	93.74
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

73	83	0	65.75	0	-8.3	-12.6	0	0	-16.06	28.79
----	----	---	-------	---	------	-------	---	---	--------	-------

Segment Leq : 28.8 dBA

Results Segment : Mountshannon Drive 5 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.2018	1.17	93.77
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

30	53	0	63.96	0	-11.55	-8.96	0	0	-20	23.45
----	----	---	-------	---	--------	-------	---	---	-----	-------

Segment Leq : 23.49 dBA

Results Segment : Mountshannon Drive 4 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.2018	2.05	94.35
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-21	0	0	63.96	0	-12.18	-9.32	0	0	-19.5	22.96

Segment Leq : 23 dBA

Results Segment : Mountshannon Drive 3 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.2018	1.64	93.99
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-38	0	0	63.96	0	-12.47	-6.74	0	0	-20	24.75

Segment Leq : 24.78 dBA

Results Segment : Longfields Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.2018	2.7	94.7
-----	--------	-----	------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
45	61	0.188946		65.75	0	-14.91	-10.52	0	0	-8.89 31.43

Segment Leq : 31.44 dBA

Results Segment : Mountshannon Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.2018	1.41	93.76
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
21	33	0	63.96	0	-12.73	-11.88	0	0	-20	19.35

Segment Leq : 19.45 dBA



Results Segment : Longfields Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

 Source ! Receiver ! Barrier ! Elevation of
 Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)

1.5 ! 3.2018 ! 1.98 ! 94.63

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-67	-54	0.608946	65.75	0	-21.53	-10.87	0	0	0	33.35
-54	24	0	65.75	0	-13.38	-3.5	0	0	-20	28.87
24	31	0.608946	65.75	0	-21.53	-9.5	0	0	0	34.72

Segment Leq : 37.71 dBA

Total Leq From All DAYTIME Road Segments : 39.49 dBA

Results Segment : Earl Mulligan Drive (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.20181	1.39	93.74
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
73	83	0	58.15	0	-8.3	-12.6	0	0	-16.06	21.19

Segment Leq : 21.26 dBA

Results Segment : Mountshannon Drive 5 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.20181	1.17	93.77
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
30	53	0	56.36	0	-11.55	-8.96	0	0	-20	15.85

Segment Leq : 16.07 dBA

Results Segment : Mountshannon Drive 4 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.20181	2.05	94.35
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-21	0	0	56.36	0	-12.18	-9.32	0	0	-19.5	15.36
-----	---	---	-------	---	--------	-------	---	---	-------	-------

Segment Leq : 15.61 dBA

Results Segment : Mountshannon Drive 3 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.20181	1.64	93.99
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-38	0	0	56.36	0	-12.47	-6.74	0	0	-20	17.15
-----	---	---	-------	---	--------	-------	---	---	-----	-------

Segment Leq : 17.31 dBA

Results Segment : Longfields Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.20181	2.7	94.7
-----	---------	-----	------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
45	61	0.1889457	58.15	0	-14.91	-10.52	0	0	0	-8.89 23.83

Segment Leq : 23.87 dBA

Results Segment : Mountshannon Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.20181	1.41	93.76
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
21	33	0	56.36	0	-12.73	-11.88	0	0	-20	11.75

Segment Leq : 12.29 dBA



Results Segment : Longfields Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)

1.5 ! 3.20181 ! 1.98 ! 94.63

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-67	-54	0.6089457	58.15	0	-21.53	-10.87	0	0	0	25.75
-54	24	0	58.15	0	-13.38	-3.5	0	0	-20	21.27

Segment Leq : 30.11 dBA

Total Leq From All NIGHTTIME Road Segments : 31.96 dBA

Total Leq - FROM ALL SOURCES : DAY: 39.5 dBA
NIGHT: 32.03 dBA

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 13

Road Data, Segment # Mountshannon Drive 1 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 1 (Day)

Road Segment - Angle 1 / Angle 2	: -80 \ 75
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 86.21
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -7 \ 70
Barrier Height	: 10
Barrier Receiver Distance	: 69.7
Source Elevation	: 92
Receiver Elevation	: 92.65
Barrier Elevation	: 92.7
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 13

Road Data, Segment # Mountshannon Drive 2 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 2 (Day)

Road Segment - Angle 1 / Angle 2	: 0 \ 19
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 321.98
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 0 \ 14
Barrier Height	: 16
Barrier Receiver Distance	: 69.6
Source Elevation	: 92
Receiver Elevation	: 92.65
Barrier Elevation	: 92.35
Reference Angle	: 0



Results Segment : Mountshannon Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.2018	2.7	95.4
-----	--------	-----	------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
-80	-7	0.608946	63.96	0	-12.22	-4.8	0	0	0	46.94	
-7	70	8.94600000000004E-03	63.96	0	-7.66	-0.34	0	0	0	-19	36.96
70	75	0.608946	63.96	0	-12.22	-16.11	0	0	0	35.63	

Segment Leq : 47.64 dBA

Results Segment : Mountshannon Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.2018	1.66	94.01
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
0	14	0	63.96	0	-13.32	-11.16	0	0	-19.5	19.98	
14	19	0.608946	63.96	0	-21.43	-12.67	0	0	0	29.86	

Segment Leq : 30.29 dBA

Total Leq From All DAYTIME Road Segments : 47.72 dBA

Results Segment : Mountshannon Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 3.20181	! 2.7	! 95.4
-----	-----------	-------	--------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
-80	-7	0.6089457		56.36	0	-12.22	-4.8	0	0	0	39.34
-7	70	8.94569999999995E-03		56.36	0	-7.66	-0.34	0	0	-19	29.36

Segment Leq : 40.04 dBA

Results Segment : Mountshannon Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 3.20181	! 1.66	! 94.01
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	14	0	56.36	0	-13.32	-11.16	0	0	-19.5	12.38

Segment Leq : 22.71 dBA

Total Leq From All NIGHTTIME Road Segments : 40.13 dBA

Total Leq - FROM ALL SOURCES : DAY: 47.72 dBA
NIGHT: 40.14 dBA

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 14

Road Data, Segment # Earl Mulligan Drive (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Earl Mulligan Drive (Day)

Road Segment - Angle 1 / Angle 2	: 66 \ 80
Wood depth	: 0 metres
No of House Rows	: 2, First Row Density of 50 %
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 141.88
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 66 \ 72
Barrier Height	: 16
Barrier Receiver Distance	: 42.4
Source Elevation	: 92
Receiver Elevation	: 92.6
Barrier Elevation	: 92.34
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 14

Road Data, Segment # Mountshannon Drive 5 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 5 (Day)

Road Segment - Angle 1 / Angle 2	: 24 \ 52
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 194.89
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 24 \ 52
Barrier Height	: 15
Barrier Receiver Distance	: 14.24
Source Elevation	: 92
Receiver Elevation	: 92.6
Barrier Elevation	: 92.65
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 14

Road Data, Segment # Mountshannon Drive 4 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 4 (Day)

Road Segment - Angle 1 / Angle 2	: -29 \ -7
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 211.5
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -29 \ -7
Barrier Height	: 15
Barrier Receiver Distance	: 15.2
Source Elevation	: 92
Receiver Elevation	: 92.6
Barrier Elevation	: 92.65
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 14

Road Data, Segment # Longfields Drive 1 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Longfields Drive 1 (Day)

Road Segment - Angle 1 / Angle 2	: 50 \ 65
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 226.88
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 50 \ 65
Barrier Height	: 7
Barrier Receiver Distance	: 31.3
Source Elevation	: 93
Receiver Elevation	: 92.6
Barrier Elevation	: 92
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 14

Road Data, Segment # Mountshannon Drive 3 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 3 (Day)

Road Segment - Angle 1 / Angle 2	: -45 \ -8
Wood depth	: 0 metres
No of House Rows	: 1, First Row Density of 20 %
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 239.04
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -30 \ -8
Barrier Height	: 16
Barrier Receiver Distance	: 60.3
Source Elevation	: 92
Receiver Elevation	: 92.6
Barrier Elevation	: 92.3
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 14

Road Data, Segment # Longfields Drive 2 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Longfields Drive 2 (Day)

Road Segment - Angle 1 / Angle 2	: -69 \ 36
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 286.46
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -69 \ 36
Barrier Height	: 15
Barrier Receiver Distance	: 17.1
Source Elevation	: 93
Receiver Elevation	: 92.6
Barrier Elevation	: 92.65
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 14

Road Data, Segment # Mountshannon Drive 2 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 2 (Day)

Road Segment - Angle 1 / Angle 2	: 20 \ 26
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 304.75
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 20 \ 25
Barrier Height	: 16
Barrier Receiver Distance	: 42.1
Source Elevation	: 92
Receiver Elevation	: 92.6
Barrier Elevation	: 92.35
Reference Angle	: 0

Results Segment : Earl Mulligan Drive (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 3.2018	! 1.85	! 94.19
-----	----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
66	72	0.608946		65.75	0	-15.7	-9.94	0	-4	0	36.11
66	72	0	65.75	0	-9.76	-15	0	0	-15	25.99	
72	80	0.608946		65.75	0	-15.7	-12.88	0	-4	0	33.17

Segment Leq : 33.93 dBA

Results Segment : Mountshannon Drive 5 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 3.2018	! 1.02	! 93.67
-----	----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
24	52	0	63.96	0	-11.14	-8.12	0	0	-20	24.7

Segment Leq : 24.73 dBA

Results Segment : Mountshannon Drive 4 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
-------------------	-----------------------	----------------------	--------------------------------

1.5	! 3.2018	! 1.02	! 93.67
-----	----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-29	-7	0	63.96	0	-11.49	-9.14	0	0	-20	23.33
-----	----	---	-------	---	--------	-------	---	---	-----	-------

Segment Leq : 23.37 dBA

Results Segment : Longfields Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
-------------------	-----------------------	----------------------	--------------------------------

1.5	! 3.2018	! 2.68	! 94.68
-----	----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

50	65	0.188946	65.75	0	-14.03	-11.62	0	0	-8.59	31.51
----	----	----------	-------	---	--------	--------	---	---	-------	-------

Segment Leq : 31.52 dBA

Results Segment : Mountshannon Drive 3 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.2018	1.78	94.08
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
-45	-30	0.608946		63.96	0	-19.35	-12.37	0	-0.8	0	31.44
-30	-8	0.608946		63.96	0	-19.35	-8.6	0	-0.8	0	35.21
-30	-8	0	63.96	0	-12.02	-9.14	0	0	-20	22.8	

Segment Leq : 32 dBA

Results Segment : Longfields Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.2018	1.93	94.58
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-69	36	0	65.75	0	-12.81	-2.5	0	0	-20	30.44

Segment Leq : 30.45 dBA

Results Segment : Mountshannon Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
-------------------	-----------------------	----------------------	--------------------------------

1.5	! 3.2018	! 1.47	! 93.82
-----	----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
20	25	0	63.96	0	-13.08	-15.6	0	0	-16.26	19.02
25	26	0.608946	63.96	0	-21.04	-12.8	0	0	0	30.12

Segment Leq : 30.45 dBA

Total Leq From All DAYTIME Road Segments : 39.15 dBA

Results Segment : Earl Mulligan Drive (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.20181	1.85	94.19
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
66	72	0.6089457	58.15	0	-15.7	-9.94	0	-4	0	28.51
66	72	0	58.15	0	-9.76	-15	0	0	-15	18.39
72	80	0.6089457	58.15	0	-15.7	-12.88	0	-4	0	25.57

Segment Leq : 26.34 dBA

Results Segment : Mountshannon Drive 5 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.20181	1.02	93.67
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
24	52	0	56.36	0	-11.14	-8.12	0	0	-20	17.1

Segment Leq : 17.27 dBA

Results Segment : Mountshannon Drive 4 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.20181	1.02	93.67
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-29	-7	0	56.36	0	-11.49	-9.14	0	0	-20	15.73
-----	----	---	-------	---	--------	-------	---	---	-----	-------

Segment Leq : 15.96 dBA

Results Segment : Longfields Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.20181	2.68	94.68
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

50	65	0.1889457	58.15	0	-14.03	-11.62	0	0	-8.59	23.91
----	----	-----------	-------	---	--------	--------	---	---	-------	-------

Segment Leq : 23.95 dBA

Results Segment : Mountshannon Drive 3 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 3.20181	! 1.78	! 94.08
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-45	-30	0.6089457	56.36	0	-19.35	-12.37	0	-0.8	0	23.84
-30	-8	0.6089457	56.36	0	-19.35	-8.6	0	-0.8	0	27.61
-30	-8	0	56.36	0	-12.02	-9.14	0	0	-20	15.2

Segment Leq : 24.41 dBA

Results Segment : Longfields Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 3.20181	! 1.93	! 94.58
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-69	36	0	58.15	0	-12.81	-2.5	0	0	-20	22.84

Segment Leq : 22.88 dBA



Results Segment : Mountshannon Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)

1.5 ! 3.20181 ! 1.47 ! 93.82

Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

20 25 0 56.36 0 -13.08 -15.6 0 0 -16.26 11.42

Segment Leq : 22.87 dBA

Total Leq From All NIGHTTIME Road Segments : 31.62 dBA

Total Leq - FROM ALL SOURCES : DAY: 39.16 dBA
NIGHT: 31.69 dBA

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 15

Road Data, Segment # Earl Mulligan Drive (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Earl Mulligan Drive (Day)

Road Segment - Angle 1 / Angle 2	: 61 \ 79
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 156.06
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 61 \ 79
Barrier Height	: 16
Barrier Receiver Distance	: 9.8
Source Elevation	: 92
Receiver Elevation	: 92.65
Barrier Elevation	: 92.3
Reference Angle	: 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 15

Road Data, Segment # Mountshannon Drive 5 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 40 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Mountshannon Drive 5 (Day)

Road Segment - Angle 1 / Angle 2 : 26 \ 56
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 161.59
Receiver Height : 3.2018
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : 26 \ 56
Barrier Height : 6
Barrier Receiver Distance : 62
Source Elevation : 92
Receiver Elevation : 92.65
Barrier Elevation : 92
Reference Angle : 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 15

Road Data, Segment # Mountshannon Drive 4 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 4 (Day)

Road Segment - Angle 1 / Angle 2	: -31 \ 0
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 178.87
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -14 \ 0
Barrier Height	: 6
Barrier Receiver Distance	: 81.4
Source Elevation	: 92
Receiver Elevation	: 92.65
Barrier Elevation	: 92
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 15

Road Data, Segment # Mountshannon Drive 3 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 3 (Day)

Road Segment - Angle 1 / Angle 2	: -50 \ -9
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 204.84
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -50 \ -18
Barrier Height	: 16
Barrier Receiver Distance	: 27.6
Source Elevation	: 92
Receiver Elevation	: 92.65
Barrier Elevation	: 92.3
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 15

Road Data, Segment # Longfields Drive 1 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Longfields Drive 1 (Day)

Road Segment - Angle 1 / Angle 2	: 55 \ 68
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 205.46
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 55 \ 68
Barrier Height	: 7
Barrier Receiver Distance	: 37.1
Source Elevation	: 93
Receiver Elevation	: 92.65
Barrier Elevation	: 92
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 15

Road Data, Segment # Longfields Drive 2 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Longfields Drive 2 (Day)

Road Segment - Angle 1 / Angle 2	: -70 \ 41
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 272.29
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -36 \ 30
Barrier Height	: 15
Barrier Receiver Distance	: 30.3
Source Elevation	: 93
Receiver Elevation	: 92.65
Barrier Elevation	: 92.52
Reference Angle	: 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 15

Road Data, Segment # Mountshannon Drive 2 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 40 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Mountshannon Drive 2 (Day)

Road Segment - Angle 1 / Angle 2 : 18 \ 21
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 295.71
Receiver Height : 3.2018
Topography : 1 (Flat Slope; No Barrier)
Source Elevation : 92
Receiver Elevation : 92.65
Reference Angle : 0

Results Segment : Earl Mulligan Drive (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.2018	1.35	93.65
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

61	79	0	65.75	0	-10.17	-10.02	0	0	-17.94	27.62
----	----	---	-------	---	--------	--------	---	---	--------	-------

Segment Leq : 27.63 dBA

Results Segment : Mountshannon Drive 5 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.2018	2.4	94.4
-----	--------	-----	------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

26	56	0.248946	63.96	0	-12.89	-8.22	0	0	-8.31	34.54
----	----	----------	-------	---	--------	-------	---	---	-------	-------

Segment Leq : 34.54 dBA

Results Segment : Mountshannon Drive 4 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.2018	2.57	94.57
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-31	-14	0.608946	63.96	0	-17.32	-10.57	0	0	0	36.07
-14	0	0.248946	63.96	0	-13.44	-11.4	0	0	-9.48	29.64

Segment Leq : 36.96 dBA

Results Segment : Mountshannon Drive 3 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.2018	1.52	93.82
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-50	-18	0	63.96	0	-11.35	-7.52	0	0	-20	25.09
-18	-9	0.608946	63.96	0	-18.27	-10.57	0	0	0	35.12

Segment Leq : 35.53 dBA

Results Segment : Longfields Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 3.2018	! 2.74	! 94.74
-----	----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
55	68	0.188946		65.75	0	-13.51	-10.47	0	0	-8.27 33.5

Segment Leq : 33.5 dBA

Results Segment : Longfields Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 3.2018	! 2.13	! 94.65
-----	----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-70	-36	0.608946		65.75	0	-20.26	-8.27	0	0	0 37.22
-36	30	0	65.75	0	-12.59	-4.1	0	0	-20	29.06
30	41	0.608946		65.75	0	-20.26	-12.77	0	0	0 32.72

Segment Leq : 39 dBA

Results Segment : Mountshannon Drive 2 (Day)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
18	21	0.608946		63.96	0	-20.83	-7.3	0	0	0 35.83

Segment Leq : 35.83 dBA

Total Leq From All DAYTIME Road Segments : 44.15 dBA

Results Segment : Earl Mulligan Drive (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.20181	1.35	93.65
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

61	79	0	58.15	0	-10.17	-10.02	0	0	-17.94	20.02
----	----	---	-------	---	--------	--------	---	---	--------	-------

Segment Leq : 20.11 dBA

Results Segment : Mountshannon Drive 5 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.20181	2.4	94.4
-----	---------	-----	------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

26	56	0.2489457	56.36	0	-12.89	-8.22	0	0	-8.31	26.94
----	----	-----------	-------	---	--------	-------	---	---	-------	-------

Segment Leq : 26.96 dBA

Results Segment : Mountshannon Drive 4 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.20181	2.57	94.57
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-31	-14	0.6089457	56.36	0	-17.32	-10.57	0	0	0	28.47
-14	0	0.2489457	56.36	0	-13.44	-11.4	0	0	-9.48	22.04

Segment Leq : 29.37 dBA

Results Segment : Mountshannon Drive 3 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.20181	1.52	93.82
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-50	-18	0	56.36	0	-11.35	-7.52	0	0	-20	17.49

Segment Leq : 27.94 dBA



Results Segment : Longfields Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 3.20181	! 2.74	! 94.74
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
55	68	0.1889457		58.15	0	-13.51	-10.47	0	0	-8.27 25.9

Segment Leq : 25.92 dBA

Results Segment : Longfields Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 3.20181	! 2.13	! 94.65
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-70	-36	0.6089457		58.15	0	-20.26	-8.27	0	0	0 29.62
-36	30	0	58.15	0	-12.59	-4.1	0	0	-20	21.46

Segment Leq : 31.4 dBA

Results Segment : Mountshannon Drive 2 (Night)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
18	21	0.6089457		56.36	0	-20.83	-7.3	0	0	0 28.23

Segment Leq : 28.24 dBA

Total Leq From All NIGHTTIME Road Segments : 36.57 dBA

Total Leq - FROM ALL SOURCES : DAY: 44.15 dBA
NIGHT: 36.59 dBA



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 16

Road Data, Segment # Mountshannon Drive 5 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 40 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Mountshannon Drive 5 (Day)

Road Segment - Angle 1 / Angle 2 : 19 \ 57
Wood depth : 0 metres
No of House Rows : 3, First Row Density of 95 %
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 136.84
Receiver Height : 3.2018
Topography : 1 (Flat Slope; No Barrier)
Source Elevation : 92
Receiver Elevation : 92.52
Reference Angle : 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 16

Road Data, Segment # Mountshannon Drive 4 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 4 (Day)

Road Segment - Angle 1 / Angle 2	: -40 \ -12
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 141.21
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -40 \ -12
Barrier Height	: 6
Barrier Receiver Distance	: 37.6
Source Elevation	: 92
Receiver Elevation	: 92.52
Barrier Elevation	: 92
Reference Angle	: 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 16

Road Data, Segment # Longfields Drive 1 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 50 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Longfields Drive 1 (Day)

Road Segment - Angle 1 / Angle 2 : 61 \ 72
Wood depth : 0 metres
No of House Rows : 5, First Row Density of 20 %
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 166.13
Receiver Height : 3.2018
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : 61 \ 65
Barrier Height : 6
Barrier Receiver Distance : 32.2
Source Elevation : 93
Receiver Elevation : 92.52
Barrier Elevation : 92
Reference Angle : 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 16

Road Data, Segment # Mountshannon Drive 3 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 3 (Day)

Road Segment - Angle 1 / Angle 2	: -57 \ -19
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 174.86
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -57 \ -29
Barrier Height	: 4.7
Barrier Receiver Distance	: 138.7
Source Elevation	: 92
Receiver Elevation	: 92.52
Barrier Elevation	: 92
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 16

Road Data, Segment # Earl Mulligan Drive (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Earl Mulligan Drive (Day)

Road Segment - Angle 1 / Angle 2	: 59 \ 76
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 192
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 59 \ 76
Barrier Height	: 4.7
Barrier Receiver Distance	: 57.3
Source Elevation	: 92
Receiver Elevation	: 92.52
Barrier Elevation	: 92
Reference Angle	: 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 16

Road Data, Segment # Longfields Drive 2 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 50 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Longfields Drive 2 (Day)

Road Segment - Angle 1 / Angle 2 : -72 \ 10
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 236.36
Receiver Height : 3.2018
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : -72 \ 10
Barrier Height : 6
Barrier Receiver Distance : 88.6
Source Elevation : 93
Receiver Elevation : 92.52
Barrier Elevation : 92
Reference Angle : 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 16

Road Data, Segment # Longfields Drive 2 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 50 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Longfields Drive 2 (Day)

Road Segment - Angle 1 / Angle 2 : 10 \ 47
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 236.36
Receiver Height : 3.2018
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : 17 \ 47
Barrier Height : 6
Barrier Receiver Distance : 193.5
Source Elevation : 93
Receiver Elevation : 92.52
Barrier Elevation : 92
Reference Angle : 0



Results Segment : Mountshannon Drive 5 (Day)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
19	57	0.608946		63.96	0	-15.45	-7.44	0	-11.2	0	29.87

Segment Leq : 29.88 dBA

Results Segment : Mountshannon Drive 4 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
1.5	! 3.2018	! 2.09	! 94.09

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
-40	-12	0.248946		63.96	0	-12.16	-8.07	0	0	-9.7	34.03

Segment Leq : 34.03 dBA

Results Segment : Longfields Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
1.5	! 3.2018	! 2.74	! 94.74

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
61	65	0.608946		65.75	0	-16.8	-14.81	0	-7	0	27.14
61	65	0.248946		65.75	0	-13.04	-13.5	0	0	-6.31	32.9
65	72	0.608946		65.75	0	-16.8	-10.44	0	-7	0	31.51

Segment Leq : 32.87 dBA

Results Segment : Mountshannon Drive 3 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.2018	3.26	95.26
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-57	-29	0.326946		63.96	0	-14.15	-8.44	0	0	-8.44 32.93
-29	-19	0.608946		63.96	0	-17.16	-11.54	0	0	0 35.26

Segment Leq : 37.26 dBA

Results Segment : Earl Mulligan Drive (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.2018	2.16	94.16
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
59	76	0.326946		65.75	0	-14.69	-11.72	0	0	-6.05 33.29

Segment Leq : 33.29 dBA

Results Segment : Longfields Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
-------------------	-----------------------	----------------------	--------------------------------

1.5	! 3.2018	! 2.96	! 94.96
-----	----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-72	10	0.248946		65.75	0	-14.96	-3.72	0	0	-7.07 40

Segment Leq : 40 dBA

Results Segment : Longfields Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
-------------------	-----------------------	----------------------	--------------------------------

1.5	! 3.2018	! 3.5	! 95.5
-----	----------	-------	--------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
10	17	0.608946		65.75	0	-19.27	-12.67	0	0	0 33.81
17	47	0.248946		65.75	0	-14.96	-8.07	0	0	-8.76 33.96

Segment Leq : 36.9 dBA

Total Leq From All DAYTIME Road Segments : 44.44 dBA



Results Segment : Mountshannon Drive 5 (Night)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
19	57	0.6089457	56.36	0	-15.45	-7.44	0	-11.2	0	22.27

Segment Leq : 22.32 dBA

Results Segment : Mountshannon Drive 4 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
1.5	! 3.20181	! 2.09	! 94.09

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-40	-12	0.2489457	56.36	0	-12.16	-8.07	0	0	0	-9.7 26.43

Segment Leq : 26.45 dBA

Results Segment : Longfields Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
1.5	! 3.20181	! 2.74	! 94.74

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
61	65	0.6089457	58.15	0	-16.8	-14.81	0	-7	0	19.54
61	65	0.2489457	58.15	0	-13.04	-13.5	0	0	0	-6.31 25.3
65	72	0.6089457	58.15	0	-16.8	-10.44	0	-7	0	23.91

Segment Leq : 25.28 dBA

Results Segment : Mountshannon Drive 3 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 3.20181	! 3.26	! 95.26
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-57	-29	0.3269457		56.36	0	-14.15	-8.44	0	0	-8.44 25.33

Segment Leq : 29.66 dBA

Results Segment : Earl Mulligan Drive (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 3.20181	! 2.16	! 94.16
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
59	76	0.3269457		58.15	0	-14.69	-11.72	0	0	-6.05 25.69

Segment Leq : 25.71 dBA

Results Segment : Longfields Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 3.20181	! 2.96	! 94.96
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-72	10	0.2489457	58.15	0	-14.96	-3.72	0	0	0	-7.07 32.4

Segment Leq : 32.4 dBA

Results Segment : Longfields Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 3.20181	! 3.5	! 95.5
-----	-----------	-------	--------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
10	17	0.6089457	58.15	0	-19.27	-12.67	0	0	0	26.21
17	47	0.2489457	58.15	0	-14.96	-8.07	0	0	0	-8.76 26.36

Segment Leq : 29.3 dBA

Total Leq From All NIGHTTIME Road Segments : 36.86 dBA

Total Leq - FROM ALL SOURCES : DAY: 44.44 dBA
NIGHT: 36.88 dBA

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 17

Road Data, Segment # Mountshannon Drive 1 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 1 (Day)

Road Segment - Angle 1 / Angle 2	: -84 \ -25
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 53.26
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -84 \ -25
Barrier Height	: 7
Barrier Receiver Distance	: 35.2663
Source Elevation	: 92
Receiver Elevation	: 92.59
Barrier Elevation	: 92
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 17

Road Data, Segment # Longfields Drive 1 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Longfields Drive 1 (Day)

Road Segment - Angle 1 / Angle 2	: 41 \ 59
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 263.16
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 41 \ 59
Barrier Height	: 7
Barrier Receiver Distance	: 13.9
Source Elevation	: 93
Receiver Elevation	: 92.59
Barrier Elevation	: 92
Reference Angle	: 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 17

Road Data, Segment # Longfields Drive 2 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 50 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Longfields Drive 2 (Day)

Road Segment - Angle 1 / Angle 2 : -31 \ 27
Wood depth : 0 metres
No of House Rows : 3, First Row Density of 90 %
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 311.67
Receiver Height : 3.2018
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : -24 \ 27
Barrier Height : 7
Barrier Receiver Distance : 30.8984
Source Elevation : 93
Receiver Elevation : 92.59
Barrier Elevation : 92
Reference Angle : 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 17

Road Data, Segment # Mountshannon Drive 1 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 1 (Day)

Road Segment - Angle 1 / Angle 2	: -25 \ 0
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 53.26
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -25 \ 0
Barrier Height	: 10
Barrier Receiver Distance	: 20.2132
Source Elevation	: 92
Receiver Elevation	: 92.59
Barrier Elevation	: 92.75
Reference Angle	: 0

Results Segment : Mountshannon Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.2018	3.02	95.02
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-84	-25	0.188946		63.96	0	-6.54	-5.42	0	0	-13.34 38.66

Segment Leq : 38.66 dBA

Results Segment : Longfields Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.2018	2.57	94.57
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
41	59	0.188946		65.75	0	-14.79	-10.98	0	0	-11.7 28.28

Segment Leq : 28.29 dBA

Results Segment : Longfields Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 3.2018	! 2.63	! 94.63
-----	----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
-31	-24	0.608946		65.75	0	-21.2	-8.94	0	-9.4	0	26.21
-24	27	0.608946		65.75	0	-21.2	-5.67	0	-9.4	0	29.48
-24	27	0.188946		65.75	0	-15.67	-5.6	0	0	-10.42	34.06

Segment Leq : 31.16 dBA

Results Segment : Mountshannon Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 3.2018	! 1.62	! 94.37
-----	----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
-25	0	8.94600000000004E-03		63.96	0	-5.55	-0.78	0	0	-20	37.63

Segment Leq : 37.63 dBA

Total Leq From All DAYTIME Road Segments : 41.8 dBA



Results Segment : Mountshannon Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)

1.5 ! 3.20181 ! 3.02 ! 95.02

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-84	-25	0.1889457		56.36	0	-6.54	-5.42	0	0	-13.34 31.06

Segment Leq : 31.07 dBA

Results Segment : Longfields Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)

1.5 ! 3.20181 ! 2.57 ! 94.57

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
41	59	0.1889457		58.15	0	-14.79	-10.98	0	0	-11.7 20.68

Segment Leq : 20.75 dBA

Results Segment : Longfields Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.20181	2.63	94.63
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-31	-24	0.6089457	58.15	0	-21.2	-8.94	0	-9.4	0	18.61
-24	27	0.6089457	58.15	0	-21.2	-5.67	0	-9.4	0	21.88
-24	27	0.1889457	58.15	0	-15.67	-5.6	0	0	-10.42	26.46

Segment Leq : 23.58 dBA

Results Segment : Mountshannon Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.20181	1.62	94.37
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-25	0	8.94569999999995E-03	56.36	0	-5.55	-0.78	0	0	0	-20 30.03

Segment Leq : 30.04 dBA

Total Leq From All NIGHTTIME Road Segments : 34.24 dBA

Total Leq - FROM ALL SOURCES : DAY: 41.81 dBA
NIGHT: 34.28 dBA

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 18

Road Data, Segment # Longfields Drive 1 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Longfields Drive 1 (Day)

Road Segment - Angle 1 / Angle 2	: 58 \ 71
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 160.08
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 58 \ 71
Barrier Height	: 7
Barrier Receiver Distance	: 8.07
Source Elevation	: 93
Receiver Elevation	: 92.77
Barrier Elevation	: 92
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 18

Road Data, Segment # Mountshannon Drive 1 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 1 (Day)

Road Segment - Angle 1 / Angle 2	: -72 \ -7
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 160.85
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -72 \ -7
Barrier Height	: 7
Barrier Receiver Distance	: 139.64
Source Elevation	: 92
Receiver Elevation	: 92.77
Barrier Elevation	: 92
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 18

Road Data, Segment # Longfields Drive 2 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Longfields Drive 2 (Day)

Road Segment - Angle 1 / Angle 2	: -31 \ 44
Wood depth	: 0 metres
No of House Rows	: 3, First Row Density of 50 %
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 219.36
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -5 \ 29
Barrier Height	: 7
Barrier Receiver Distance	: 42.596
Source Elevation	: 93
Receiver Elevation	: 92.77
Barrier Elevation	: 92
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 18

Road Data, Segment # Mountshannon Drive 1 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 1 (Day)

Road Segment - Angle 1 / Angle 2	: -7 \ 0
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 160.85
Receiver Height	: 3.2018
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -7 \ -2
Barrier Height	: 10
Barrier Receiver Distance	: 127.88
Source Elevation	: 92
Receiver Elevation	: 92.77
Barrier Elevation	: 92.75
Reference Angle	: 0

Results Segment : Longfields Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.2018	2.57	94.57
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
58	71	0.188946		65.75	0	-12.23	-11.36	0	0	-11.53 30.63

Segment Leq : 30.64 dBA

Results Segment : Mountshannon Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.2018	3.65	95.65
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-72	-7	0.188946		63.96	0	-12.25	-4.58	0	0	-14.15 32.98

Segment Leq : 32.98 dBA

Results Segment : Longfields Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.2018	2.79	94.79
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
-31	-5	0.608946		65.75	0	-18.75	-8.5	0	-5.5	0	33
-5	29	0.608946		65.75	0	-18.75	-7.6	0	-5.5	0	33.9
-5	29	0.188946		65.75	0	-13.85	-7.5	0	0	-9.85	34.55
29	44	0.608946		65.75	0	-18.75	-11.24	0	-5.5	0	30.26

Segment Leq : 37.41 dBA

Results Segment : Mountshannon Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.2018	2.72	95.47
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
-7	-2	8.94600000000004E-03		63.96	0	-10.4	-1.13	0	0	-16.17	36.26
-2	0	0.608946		63.96	0	-16.58	-2.5	0	0	0	44.88

Segment Leq : 45.44 dBA

Total Leq From All DAYTIME Road Segments : 46.4 dBA

Results Segment : Longfields Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.20181	2.57	94.57
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
58	71	0.1889457	58.15	0	-12.23	-11.36	0	0	0	-11.53 23.03

Segment Leq : 23.07 dBA

Results Segment : Mountshannon Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.20181	3.65	95.65
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-72	-7	0.1889457	56.36	0	-12.25	-4.58	0	0	0	-14.15 25.38

Segment Leq : 25.41 dBA



Results Segment : Longfields Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.20181	2.79	94.79
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-31	-5	0.6089457	58.15	0	-18.75	-8.5	0	-5.5	0	25.4
-5	29	0.6089457	58.15	0	-18.75	-7.6	0	-5.5	0	26.3
-5	29	0.1889457	58.15	0	-13.85	-7.5	0	0	-9.85	26.95
29	44	0.6089457	58.15	0	-18.75	-11.24	0	-5.5	0	22.66

Segment Leq : 29.81 dBA

Results Segment : Mountshannon Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	3.20181	2.72	95.47
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-7	-2	8.945699999999995E-03	56.36	0	-10.4	-1.13	0	0	0	-16.17 28.66

Segment Leq : 37.84 dBA

Total Leq From All NIGHTTIME Road Segments : 38.81 dBA

Total Leq - FROM ALL SOURCES : DAY: 46.4 dBA
NIGHT: 38.82 dBA



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 19

Road Data, Segment # Mountshannon Drive 1 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 40 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Mountshannon Drive 1 (Day)

Road Segment - Angle 1 / Angle 2 : -85 \ 82
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 42.3
Receiver Height : 1.5
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : -72 \ 82
Barrier Height : 10
Barrier Receiver Distance : 9.5
Source Elevation : 92
Receiver Elevation : 92.54
Barrier Elevation : 92.75
Reference Angle : 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 19

Road Data, Segment # Earl Mulligan Drive (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Earl Mulligan Drive (Day)

Road Segment - Angle 1 / Angle 2	: 75 \ 84
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 94.62
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 75 \ 84
Barrier Height	: 15
Barrier Receiver Distance	: 3.33
Source Elevation	: 92
Receiver Elevation	: 92.54
Barrier Elevation	: 92.54
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 19

Road Data, Segment # Mountshannon Drive 5 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 5 (Day)

Road Segment - Angle 1 / Angle 2	: 28 \ 51
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 235.49
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 28 \ 51
Barrier Height	: 15
Barrier Receiver Distance	: 2.7509
Source Elevation	: 92
Receiver Elevation	: 92.54
Barrier Elevation	: 92.54
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 19

Road Data, Segment # Mountshannon Drive 4 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 4 (Day)

Road Segment - Angle 1 / Angle 2	: -21 \ 0
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 267.11
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -21 \ 0
Barrier Height	: 15
Barrier Receiver Distance	: 3.17
Source Elevation	: 92
Receiver Elevation	: 92.54
Barrier Elevation	: 92.54
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 19

Road Data, Segment # Longfields Drive 1 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Longfields Drive 1 (Day)

Road Segment - Angle 1 / Angle 2	: 42 \ 59
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 280.62
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 42 \ 59
Barrier Height	: 7
Barrier Receiver Distance	: 36.96
Source Elevation	: 93
Receiver Elevation	: 92.54
Barrier Elevation	: 92
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 19

Road Data, Segment # Mountshannon Drive 3 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 3 (Day)

Road Segment - Angle 1 / Angle 2	: -36 \ 0
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 286.12
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -36 \ 0
Barrier Height	: 15
Barrier Receiver Distance	: 3.86
Source Elevation	: 92
Receiver Elevation	: 92.54
Barrier Elevation	: 92.54
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 19

Road Data, Segment # Mountshannon Drive 2 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 2 (Day)

Road Segment - Angle 1 / Angle 2	: 12 \ 35
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 289
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 20 \ 35
Barrier Height	: 16
Barrier Receiver Distance	: 100.99
Source Elevation	: 92
Receiver Elevation	: 92.54
Barrier Elevation	: 92.3
Reference Angle	: 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 19

Road Data, Segment # Longfields Drive 2 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 50 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Longfields Drive 2 (Day)

Road Segment - Angle 1 / Angle 2 : -67 \ 28
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 333.72
Receiver Height : 1.5
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : -67 \ 28
Barrier Height : 15
Barrier Receiver Distance : 3.555
Source Elevation : 93
Receiver Elevation : 92.54
Barrier Elevation : 92.54
Reference Angle : 0

Results Segment : Mountshannon Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.5	0.87	93.62
-----	-----	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-85	-72	0.66	63.96	0	-7.47	-14.1	0	0	0	42.39
-----	-----	------	-------	---	-------	-------	---	---	---	-------

-72	82	0.06	63.96	0	-4.77	-0.48	0	0	-19.71	39
-----	----	------	-------	---	-------	-------	---	---	--------	----

Segment Leq : 44.03 dBA

Results Segment : Earl Mulligan Drive (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.5	0.98	93.52
-----	-----	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

75	84	0	65.75	0	-8	-13.2	0	0	-17.77	26.78
----	----	---	-------	---	----	-------	---	---	--------	-------

Segment Leq : 26.8 dBA

Results Segment : Mountshannon Drive 5 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.5	0.97	93.51
-----	-----	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
28	51	0	63.96	0	-11.96	-8.96	0	0	-20	23.04

Segment Leq : 23.08 dBA

Results Segment : Mountshannon Drive 4 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.5	0.97	93.51
-----	-----	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-21	0	0	63.96	0	-12.51	-9.32	0	0	-20	22.13

Segment Leq : 22.18 dBA

Results Segment : Longfields Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 1.5	! 2.44	! 94.44
-----	-------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

42	59	0.24	65.75	0	-15.77	-10.98	0	0	-11.36	27.64
----	----	------	-------	---	--------	--------	---	---	--------	-------

Segment Leq : 27.65 dBA

Results Segment : Mountshannon Drive 3 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 1.5	! 0.97	! 93.51
-----	-------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-36	0	0	63.96	0	-12.8	-6.98	0	0	-20	24.18
-----	---	---	-------	---	-------	-------	---	---	-----	-------

Segment Leq : 24.21 dBA

Results Segment : Mountshannon Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.5	1.39	93.69
-----	-----	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

12	20	0.66	63.96	0	-21.33	-10.2	0	0	0	32.43
----	----	------	-------	---	--------	-------	---	---	---	-------

20	35	0	63.96	0	-12.85	-10.8	0	0	-19.63	20.68
----	----	---	-------	---	--------	-------	---	---	--------	-------

Segment Leq : 32.71 dBA

Results Segment : Longfields Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.5	1.96	94.5
-----	-----	------	------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-67	28	0	65.75	0	-13.47	-2.5	0	0	-20	29.78
-----	----	---	-------	---	--------	------	---	---	-----	-------

Segment Leq : 29.79 dBA

Total Leq From All DAYTIME Road Segments : 44.75 dBA

Results Segment : Mountshannon Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.50001	0.87	93.62
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-85	-72	0.6599997	56.36	0	-7.47	-14.1	0	0	0	34.79
-72	82	0.0599997	56.36	0	-4.77	-0.48	0	0	-19.71	31.4

Segment Leq : 36.43 dBA

Results Segment : Earl Mulligan Drive (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.50001	0.98	93.52
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
75	84	0	58.15	0	-8	-13.2	0	0	-17.77	19.18

Segment Leq : 19.28 dBA

Results Segment : Mountshannon Drive 5 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.50001	0.97	93.51
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
28	51	0	56.36	0	-11.96	-8.96	0	0	-20	15.44

Segment Leq : 15.68 dBA

Results Segment : Mountshannon Drive 4 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.50001	0.97	93.51
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-21	0	0	56.36	0	-12.51	-9.32	0	0	-20	14.53

Segment Leq : 14.83 dBA

Results Segment : Longfields Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.50001	2.44	94.44
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
42	59	0.2399997	58.15	0	-15.77	-10.98	0	0	0	-11.36 20.04

Segment Leq : 20.13 dBA

Results Segment : Mountshannon Drive 3 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.50001	0.97	93.51
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-36	0	0	56.36	0	-12.8	-6.98	0	0	-20	16.58

Segment Leq : 16.77 dBA

Results Segment : Mountshannon Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 1.50001	! 1.39	! 93.69
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
12	20	0.6599997	56.36	0	-21.33	-10.2	0	0	0	24.83
20	35	0	56.36	0	-12.85	-10.8	0	0	-19.63	13.08

Segment Leq : 25.12 dBA

Results Segment : Longfields Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 1.50001	! 1.96	! 94.5
-----	-----------	--------	--------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-67	28	0	58.15	0	-13.47	-2.5	0	0	-20	22.18

Segment Leq : 22.23 dBA

Total Leq From All NIGHTTIME Road Segments : 37.17 dBA

Total Leq - FROM ALL SOURCES : DAY: 44.75 dBA
NIGHT: 37.19 dBA



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 20

Road Data, Segment # Mountshannon Drive 1 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 1 (Day)

Road Segment - Angle 1 / Angle 2	: -78 \ 70
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 106.77
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -74 \ 70
Barrier Height	: 15
Barrier Receiver Distance	: 7.05
Source Elevation	: 92
Receiver Elevation	: 92.43
Barrier Elevation	: 92.43
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 20

Road Data, Segment # Earl Mulligan Drive (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Earl Mulligan Drive (Day)

Road Segment - Angle 1 / Angle 2	: 64 \ 80
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 150.07
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 64 \ 68
Barrier Height	: 16
Barrier Receiver Distance	: 41.1366
Source Elevation	: 92
Receiver Elevation	: 92.43
Barrier Elevation	: 92.3
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 20

Road Data, Segment # Mountshannon Drive 5 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 5 (Day)

Road Segment - Angle 1 / Angle 2	: 22 \ 51
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 192.7
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 22 \ 51
Barrier Height	: 15
Barrier Receiver Distance	: 7.223
Source Elevation	: 92
Receiver Elevation	: 92.43
Barrier Elevation	: 92.43
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 20

Road Data, Segment # Mountshannon Drive 4 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 4 (Day)

Road Segment - Angle 1 / Angle 2	: -31 \ -9
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 205.52
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -31 \ -9
Barrier Height	: 15
Barrier Receiver Distance	: 7.245
Source Elevation	: 92
Receiver Elevation	: 92.43
Barrier Elevation	: 92.43
Reference Angle	: 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 20

Road Data, Segment # Longfields Drive 1 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 50 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Longfields Drive 1 (Day)

Road Segment - Angle 1 / Angle 2 : 51 \ 66
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 218.78
Receiver Height : 1.5
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : 51 \ 66
Barrier Height : 7
Barrier Receiver Distance : 27.03
Source Elevation : 93
Receiver Elevation : 92.43
Barrier Elevation : 92
Reference Angle : 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 20

Road Data, Segment # Mountshannon Drive 3 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 3 (Day)

Road Segment - Angle 1 / Angle 2	: -47 \ -10
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 235.48
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -36 \ -10
Barrier Height	: 15
Barrier Receiver Distance	: 8.71
Source Elevation	: 92
Receiver Elevation	: 92.43
Barrier Elevation	: 92.43
Reference Angle	: 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 20

Road Data, Segment # Longfields Drive 2 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 50 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Longfields Drive 2 (Day)

Road Segment - Angle 1 / Angle 2 : -70 \ 37
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 278.27
Receiver Height : 1.5
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : -70 \ 37
Barrier Height : 15
Barrier Receiver Distance : 8.34
Source Elevation : 93
Receiver Elevation : 92.43
Barrier Elevation : 92.43
Reference Angle : 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 20

Road Data, Segment # Mountshannon Drive 2 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 40 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Mountshannon Drive 2 (Day)

Road Segment - Angle 1 / Angle 2 : 0 \ 25
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 310.63
Receiver Height : 1.5
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : 0 \ 25
Barrier Height : 16
Barrier Receiver Distance : 114.97
Source Elevation : 92
Receiver Elevation : 92.43
Barrier Elevation : 92.3
Reference Angle : 0

Results Segment : Mountshannon Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.5	1.1	93.53
-----	-----	-----	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-78	-74	0.66	63.96	0	-14.15	-16.4	0	0	0	33.41
-----	-----	------	-------	---	--------	-------	---	---	---	-------

-74	70	0	63.96	0	-8.52	-1.1	0	0	-20	34.34
-----	----	---	-------	---	-------	------	---	---	-----	-------

Segment Leq : 36.91 dBA

Results Segment : Earl Mulligan Drive (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.5	1.32	93.62
-----	-----	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

64	68	0	65.75	0	-10	-15.6	0	0	-16	24.15
----	----	---	-------	---	-----	-------	---	---	-----	-------

68	80	0.66	65.75	0	-16.6	-15.7	0	0	0	64 33.45
----	----	------	-------	---	-------	-------	---	---	---	-------------

Segment Leq : 33.93 dBA

Results Segment : Mountshannon Drive 5 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.5	1.09	93.52
-----	-----	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
22	51	0	63.96	0	-11.09	-7.96	0	0	-20	24.91

Segment Leq : 24.94 dBA

Results Segment : Mountshannon Drive 4 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.5	1.09	93.52
-----	-----	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-31	-9	0	63.96	0	-11.37	-9.14	0	0	-20	23.45

Segment Leq : 23.49 dBA

Results Segment : Longfields Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.5	2.43	94.43
-----	-----	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
51	66	0.24	65.75	0	-14.43	-10.45	0	0	-11.02	29.85

Segment Leq : 29.86 dBA

Results Segment : Mountshannon Drive 3 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.5	1.09	93.52
-----	-----	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-47	-36	0.66	63.96	0	-19.85	-9.9	0	0	0	34.21
-36	-10	0	63.96	0	-11.96	-8.44	0	0	-20	23.56

Segment Leq : 34.57 dBA



Results Segment : Longfields Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
-------------------	-----------------------	----------------------	--------------------------------

1.5	! 1.5	! 2.05	! 94.48
-----	-------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-70	37	0	65.75	0	-12.68	-2.15	0	0	-20	30.92

Segment Leq : 30.93 dBA

Results Segment : Mountshannon Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
-------------------	-----------------------	----------------------	--------------------------------

1.5	! 1.5	! 1.36	! 93.66
-----	-------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	25	0	63.96	0	-13.16	-8.6	0	0	-19.23	22.97

Segment Leq : 23.01 dBA

Total Leq From All DAYTIME Road Segments : 41.21 dBA

Results Segment : Mountshannon Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.5	1.50001	1.1	93.53

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-78	-74	0.6599997	56.36	0	-14.15	-16.4	0	0	0	25.81
-74	70	0	56.36	0	-8.52	-1.1	0	0	-20	26.74

Segment Leq : 29.32 dBA

Results Segment : Earl Mulligan Drive (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.5	1.50001	1.32	93.62

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
64	68	0	58.15	0	-10	-15.6	0	0	-16	16.55

Segment Leq : 26.34 dBA

Results Segment : Mountshannon Drive 5 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
-------------------	-----------------------	----------------------	--------------------------------

1.5	! 1.50001	! 1.09	! 93.52
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
22	51	0	56.36	0	-11.09	-7.96	0	0	-20	17.31

Segment Leq : 17.47 dBA

Results Segment : Mountshannon Drive 4 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
-------------------	-----------------------	----------------------	--------------------------------

1.5	! 1.50001	! 1.09	! 93.52
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-31	-9	0	56.36	0	-11.37	-9.14	0	0	-20	15.85

Segment Leq : 16.07 dBA

Results Segment : Longfields Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.50001	2.43	94.43
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
51	66	0.2399997		58.15	0	-14.43	-10.45	0	0	-11.02 22.25

Segment Leq : 22.3 dBA

Results Segment : Mountshannon Drive 3 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.50001	1.09	93.52
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-47	-36	0.6599997		56.36	0	-19.85	-9.9	0	0	0 26.61
-36	-10	0	56.36	0	-11.96	-8.44	0	0	-20	15.96

Segment Leq : 26.98 dBA



Results Segment : Longfields Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)

1.5 ! 1.50001 ! 2.05 ! 94.48

Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

-70 37 0 58.15 0 -12.68 -2.15 0 0 -20 23.32

Segment Leq : 23.36 dBA

Results Segment : Mountshannon Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)

1.5 ! 1.50001 ! 1.36 ! 93.66

Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

0 25 0 56.36 0 -13.16 -8.6 0 0 -19.23 15.37

Segment Leq : 15.62 dBA

Total Leq From All NIGHTTIME Road Segments : 33.66 dBA

Total Leq - FROM ALL SOURCES : DAY: 41.22 dBA
NIGHT: 33.71 dBA

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 21

Road Data, Segment # Mountshannon Drive 4 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 4 (Day)

Road Segment - Angle 1 / Angle 2	: -44 \ -20
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 144.06
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -44 \ -20
Barrier Height	: 6
Barrier Receiver Distance	: 26.79
Source Elevation	: 92
Receiver Elevation	: 92.72
Barrier Elevation	: 92
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 21

Road Data, Segment # Mountshannon Drive 5 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 5 (Day)

Road Segment - Angle 1 / Angle 2	: 12 \ 52
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 149.8
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 12 \ 52
Barrier Height	: 6
Barrier Receiver Distance	: 26.33
Source Elevation	: 92
Receiver Elevation	: 92.72
Barrier Elevation	: 92
Reference Angle	: 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 21

Road Data, Segment # Longfields Drive 1 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 50 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Longfields Drive 1 (Day)

Road Segment - Angle 1 / Angle 2 : 61 \ 73
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 157.29
Receiver Height : 1.5
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : 61 \ 73
Barrier Height : 7
Barrier Receiver Distance : 49.56
Source Elevation : 93
Receiver Elevation : 92.72
Barrier Elevation : 92
Reference Angle : 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 21

Road Data, Segment # Mountshannon Drive 1 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 1 (Day)

Road Segment - Angle 1 / Angle 2	: -72 \ 60
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 170.98
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -72 \ 60
Barrier Height	: 15
Barrier Receiver Distance	: 3
Source Elevation	: 92
Receiver Elevation	: 92.72
Barrier Elevation	: 92.72
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 21

Road Data, Segment # Mountshannon Drive 3 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 3 (Day)

Road Segment - Angle 1 / Angle 2	: -57 \ -23
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 184.82
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -57 \ -32
Barrier Height	: 4.7
Barrier Receiver Distance	: 96.71
Source Elevation	: 92
Receiver Elevation	: 92.72
Barrier Elevation	: 92
Reference Angle	: 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 21

Road Data, Segment # Earl Mulligan Drive (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 50 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Earl Mulligan Drive (Day)

Road Segment - Angle 1 / Angle 2 : 54 \ 75
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 205.12
Receiver Height : 1.5
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : 54 \ 75
Barrier Height : 4
Barrier Receiver Distance : 59.633
Source Elevation : 92
Receiver Elevation : 92.72
Barrier Elevation : 92
Reference Angle : 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 21

Road Data, Segment # Longfields Drive 2 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Longfields Drive 2 (Day)

Road Segment - Angle 1 / Angle 2	: -73 \ 13
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 223.23
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -73 \ 5
Barrier Height	: 6
Barrier Receiver Distance	: 81.6
Source Elevation	: 93
Receiver Elevation	: 92.72
Barrier Elevation	: 92
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 21

Road Data, Segment # Mountshannon Drive 2 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 2 (Day)

Road Segment - Angle 1 / Angle 2	: -11 \ 14
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 331.82
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -11 \ 14
Barrier Height	: 15
Barrier Receiver Distance	: 9.26
Source Elevation	: 92
Receiver Elevation	: 92.72
Barrier Elevation	: 92.72
Reference Angle	: 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 21

Road Data, Segment # Longfields Drive 2 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 50 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Longfields Drive 2 (Day)

Road Segment - Angle 1 / Angle 2 : 13 \ 47
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 223.23
Receiver Height : 1.5
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : 13 \ 47
Barrier Height : 6
Barrier Receiver Distance : 167.33
Source Elevation : 93
Receiver Elevation : 92.72
Barrier Elevation : 92
Reference Angle : 0

Results Segment : Mountshannon Drive 4 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.5	1.63	93.63
-----	-----	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-44	-20	0.3	63.96	0	-12.77	-9.4	0	0	-13.05	28.74

Segment Leq : 28.75 dBA

Results Segment : Mountshannon Drive 5 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.5	1.63	93.63
-----	-----	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
12	52	0.3	63.96	0	-12.99	-6.9	0	0	-12.11	31.96

Segment Leq : 31.97 dBA

Results Segment : Longfields Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.5	2.41	94.41
-----	-----	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
61	73	0.24	65.75	0	-12.66	-11.09	0	0	-9.73	32.27

Segment Leq : 32.28 dBA

Results Segment : Mountshannon Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.5	0.79	93.51
-----	-----	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-72	60	0	63.96	0	-10.57	-1.45	0	0	-20	31.94

Segment Leq : 31.95 dBA

Results Segment : Mountshannon Drive 3 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.5	1.88	93.88
-----	-----	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-57	-32	0.378	63.96	0	-15.03	-9.78	0	0	-7.67	31.48
-32	-23	0.66	63.96	0	-18.1	-9.7	0	0	0	36.16

Segment Leq : 37.43 dBA

Results Segment : Earl Mulligan Drive (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.5	1.71	93.71
-----	-----	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
54	75	0.42	65.75	0	-16.13	-11.32	0	0	-6.24	32.06

Segment Leq : 32.07 dBA

Results Segment : Longfields Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
-------------------	-----------------------	----------------------	--------------------------------

1.5	! 1.5	! 2.4	! 94.4
-----	-------	-------	--------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-73	5	0.3	65.75	0	-15.24	-4	0	0	-8.44	38.07
-----	---	-----	-------	---	--------	----	---	---	-------	-------

5	13	0.66	65.75	0	-19.47	-8.5	0	0	0	37.78
---	----	------	-------	---	--------	------	---	---	---	-------

Segment Leq : 40.94 dBA

Results Segment : Mountshannon Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
-------------------	-----------------------	----------------------	--------------------------------

1.5	! 1.5	! 0.8	! 93.52
-----	-------	-------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-11	14	0	63.96	0	-13.45	-8.6	0	0	-20	21.91
-----	----	---	-------	---	--------	------	---	---	-----	-------

Segment Leq : 21.97 dBA

Results Segment : Longfields Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.5	2.29	94.29
-----	-----	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
13	47	0.3	65.75	0	-15.24	-7.8	0	0	-9.49	33.22

Segment Leq : 33.22 dBA

Total Leq From All DAYTIME Road Segments : 44.38 dBA

Results Segment : Mountshannon Drive 4 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 1.50001	! 1.63	! 93.63
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-44	-20	0.2999997	56.36	0	-12.77	-9.4	0	0	0	-13.05 21.14

Segment Leq : 21.21 dBA

Results Segment : Mountshannon Drive 5 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 1.50001	! 1.63	! 93.63
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
12	52	0.2999997	56.36	0	-12.99	-6.9	0	0	0	-12.11 24.36

Segment Leq : 24.39 dBA



Results Segment : Longfields Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)

1.5 ! 1.50001 ! 2.41 ! 94.41

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
61	73	0.2399997		58.15	0	-12.66	-11.09	0	0	-9.73 24.67

Segment Leq : 24.7 dBA

Results Segment : Mountshannon Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)

1.5 ! 1.50001 ! 0.79 ! 93.51

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-72	60	0	56.36	0	-10.57	-1.45	0	0	-20	24.34

Segment Leq : 24.37 dBA

Results Segment : Mountshannon Drive 3 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 1.50001	! 1.88	! 93.88
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
-57	-32	0.3779997		56.36	0	-15.03	-9.78	0	0	-7.67 23.88

Segment Leq : 29.84 dBA

Results Segment : Earl Mulligan Drive (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 1.50001	! 1.71	! 93.71
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
54	75	0.4199997		58.15	0	-16.13	-11.32	0	0	-6.24 24.46

Segment Leq : 24.49 dBA



Results Segment : Longfields Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 1.50001	! 2.4	! 94.4
-----	-----------	-------	--------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-73	5	0.2999997		58.15	0	-15.24	-4	0	0	-8.44 30.47

Segment Leq : 33.34 dBA

Results Segment : Mountshannon Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 1.50001	! 0.8	! 93.52
-----	-----------	-------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-11	14	0	56.36	0	-13.45	-8.6	0	0	-20	14.31

Segment Leq : 14.62 dBA



Results Segment : Longfields Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
-------------------	-----------------------	----------------------	--------------------------------

1.5	! 1.50001	! 2.29	! 94.29
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
13	47	0.2999997	58.15	0	-15.24	-7.8	0	0	0	-9.49	25.62

Segment Leq : 25.64 dBA

Total Leq From All NIGHTTIME Road Segments : 36.8 dBA

Total Leq - FROM ALL SOURCES : DAY: 44.38 dBA
 NIGHT: 36.82 dBA

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 22

Road Data, Segment # Mountshannon Drive 1 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 1 (Day)

Road Segment - Angle 1 / Angle 2	: -82 \ 70
Wood depth	: 0 metres
No of House Rows	: 1, First Row Density of 95 %
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 82.86
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -68 \ 68
Barrier Height	: 16
Barrier Receiver Distance	: 6.84
Source Elevation	: 92
Receiver Elevation	: 92.3
Barrier Elevation	: 92.3
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 22

Road Data, Segment # Earl Mulligan Drive (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Earl Mulligan Drive (Day)

Road Segment - Angle 1 / Angle 2	: 70 \ 83
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 96.62
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 70 \ 83
Barrier Height	: 16
Barrier Receiver Distance	: 14.9665
Source Elevation	: 92
Receiver Elevation	: 92.3
Barrier Elevation	: 92.3
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 22

Road Data, Segment # Mountshannon Drive 5 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 5 (Day)

Road Segment - Angle 1 / Angle 2	: 41 \ 62
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 159.9
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 41 \ 62
Barrier Height	: 16
Barrier Receiver Distance	: 4.834
Source Elevation	: 92
Receiver Elevation	: 92.3
Barrier Elevation	: 92.3
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 22

Road Data, Segment # Mountshannon Drive 4 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 4 (Day)

Road Segment - Angle 1 / Angle 2	: -14 \ 10
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 208.99
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -14 \ 10
Barrier Height	: 16
Barrier Receiver Distance	: 6.7947
Source Elevation	: 92
Receiver Elevation	: 92.3
Barrier Elevation	: 92.3
Reference Angle	: 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 22

Road Data, Segment # Mountshannon Drive 3 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 40 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Mountshannon Drive 3 (Day)

Road Segment - Angle 1 / Angle 2 : -41 \ -31
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 213.93
Receiver Height : 1.5
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : -41 \ -31
Barrier Height : 16
Barrier Receiver Distance : 39.7379
Source Elevation : 92
Receiver Elevation : 92.3
Barrier Elevation : 92.3
Reference Angle : 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 22

Road Data, Segment # Mountshannon Drive 2 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 2 (Day)

Road Segment - Angle 1 / Angle 2	: 0 \ 31
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 241.57
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 0 \ 13
Barrier Height	: 16
Barrier Receiver Distance	: 51.74
Source Elevation	: 92
Receiver Elevation	: 92.3
Barrier Elevation	: 92.3
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 22

Road Data, Segment # Longfields Drive 1 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Longfields Drive 1 (Day)

Road Segment - Angle 1 / Angle 2	: 51 \ 64
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 259.82
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 51 \ 64
Barrier Height	: 15
Barrier Receiver Distance	: 26.97
Source Elevation	: 93
Receiver Elevation	: 92.3
Barrier Elevation	: 92.6
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 22

Road Data, Segment # Longfields Drive 2 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Longfields Drive 2 (Day)

Road Segment - Angle 1 / Angle 2	: -65 \ 37
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 331.73
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -65 \ 37
Barrier Height	: 16
Barrier Receiver Distance	: 7.6771
Source Elevation	: 93
Receiver Elevation	: 92.3
Barrier Elevation	: 92.3
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 22

Road Data, Segment # Mountshannon Drive 3 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 3 (Day)

Road Segment - Angle 1 / Angle 2	: -31 \ 7
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 213.93
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -31 \ 7
Barrier Height	: 16
Barrier Receiver Distance	: 8.0559
Source Elevation	: 92
Receiver Elevation	: 92.3
Barrier Elevation	: 92.3
Reference Angle	: 0

Results Segment : Mountshannon Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.5	1.22	93.52
-----	-----	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-82	-68	0.66	63.96	0	-12.32	-14.4	0	-8.9	0	28.34
-68	68	0.66	63.96	0	-12.32	-2	0	-8.9	0	40.74
-68	68	0	63.96	0	-7.42	-1.1	0	0	-20	35.44
68	70	0.66	63.96	0	-12.32	-3	0	-8.9	0	39.74

Segment Leq : 41.34 dBA

Results Segment : Earl Mulligan Drive (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.5	1.25	93.55
-----	-----	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
70	83	0	65.75	0	-8.09	-11.52	0	0	-17.19	28.95

Segment Leq : 28.96 dBA

Results Segment : Mountshannon Drive 5 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 1.5	! 1.21	! 93.51
-----	-------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

41	62	0	63.96	0	-10.28	-9.32	0	0	-20	24.36
----	----	---	-------	---	--------	-------	---	---	-----	-------

Segment Leq : 24.39 dBA

Results Segment : Mountshannon Drive 4 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 1.5	! 1.21	! 93.51
-----	-------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-14	10	0	63.96	0	-11.44	-8.78	0	0	-20	23.74
-----	----	---	-------	---	--------	-------	---	---	-----	-------

Segment Leq : 23.78 dBA

Results Segment : Mountshannon Drive 3 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.5	1.26	93.56
-----	-----	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-41	-31	0	63.96	0	-11.54	-12.6	0	0	-19	20.82

Segment Leq : 20.89 dBA

Results Segment : Mountshannon Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.5	1.26	93.56
-----	-----	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	13	0	63.96	0	-12.07	-11.52	0	0	-20	20.37
13	31	0.66	63.96	0	-20.04	-10	0	0	0	33.92

Segment Leq : 34.11 dBA

Results Segment : Longfields Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.5	1.83	94.43
-----	-----	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

51	64	0	65.75	0	-12.39	-11.52	0	0	-18	23.84
----	----	---	-------	---	--------	--------	---	---	-----	-------

Segment Leq : 23.88 dBA

Results Segment : Longfields Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.5	2.18	94.48
-----	-----	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-65	37	0	65.75	0	-13.45	-2.5	0	0	-20	29.8
-----	----	---	-------	---	--------	------	---	---	-----	------

Segment Leq : 29.81 dBA

Results Segment : Mountshannon Drive 3 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 1.5	! 1.21	! 93.51
-----	-------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-31	7	0	63.96	0	-11.54	-6.74	0	0	-20	25.68

Segment Leq : 25.7 dBA

Total Leq From All DAYTIME Road Segments : 42.83 dBA

Results Segment : Mountshannon Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 1.50001	! 1.22	! 93.52
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-82	-68	0.6599997	56.36	0	-12.32	-14.4	0	0	-8.9	20.74
-68	68	0.6599997	56.36	0	-12.32	-2	0	0	-8.9	33.14
-68	68	0	56.36	0	-7.42	-1.1	0	0	-20	27.84
68	70	0.6599997	56.36	0	-12.32	-3	0	0	-8.9	32.14

Segment Leq : 33.74 dBA



Results Segment : Earl Mulligan Drive (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)

1.5 ! 1.50001 ! 1.25 ! 93.55

Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

70 83 0 58.15 0 -8.09 -11.52 0 0 -17.19 21.35

Segment Leq : 21.41 dBA

Results Segment : Mountshannon Drive 5 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)

1.5 ! 1.50001 ! 1.21 ! 93.51

Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

41 62 0 56.36 0 -10.28 -9.32 0 0 -20 16.76

Segment Leq : 16.94 dBA

Results Segment : Mountshannon Drive 4 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 1.50001	! 1.21	! 93.51
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-14	10	0	56.36	0	-11.44	-8.78	0	0	-20	16.14
-----	----	---	-------	---	--------	-------	---	---	-----	-------

Segment Leq : 16.35 dBA

Results Segment : Mountshannon Drive 3 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 1.50001	! 1.26	! 93.56
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-41	-31	0	56.36	0	-11.54	-12.6	0	0	-19	13.22
-----	-----	---	-------	---	--------	-------	---	---	-----	-------

Segment Leq : 13.62 dBA

Results Segment : Mountshannon Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 1.50001	! 1.26	! 93.56
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

0	13	0	56.36	0	-12.07	-11.52	0	0	-20	12.77
---	----	---	-------	---	--------	--------	---	---	-----	-------

Segment Leq : 26.52 dBA

Results Segment : Longfields Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 1.50001	! 1.83	! 94.43
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

51	64	0	58.15	0	-12.39	-11.52	0	0	-18	16.24
----	----	---	-------	---	--------	--------	---	---	-----	-------

Segment Leq : 16.44 dBA



Results Segment : Longfields Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.5	1.50001	2.18	94.48

1.5 ! 1.50001 ! 2.18 ! 94.48

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-65	37	0	58.15	0	-13.45	-2.5	0	0	-20	22.2

Segment Leq : 22.25 dBA

Results Segment : Mountshannon Drive 3 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.5	1.50001	1.21	93.51

1.5 ! 1.50001 ! 1.21 ! 93.51

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-31	7	0	56.36	0	-11.54	-6.74	0	0	-20	18.08

Segment Leq : 18.21 dBA

Total Leq From All NIGHTTIME Road Segments : 35.27 dBA

Total Leq - FROM ALL SOURCES : DAY: 42.84 dBA
NIGHT: 35.3 dBA

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 23

Road Data, Segment # Mountshannon Drive 5 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 5 (Day)

Road Segment - Angle 1 / Angle 2	: 38 \ 65
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 117.89
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 38 \ 65
Barrier Height	: 6
Barrier Receiver Distance	: 37.04
Source Elevation	: 92
Receiver Elevation	: 92.3
Barrier Elevation	: 92
Reference Angle	: 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 23

Road Data, Segment # Mountshannon Drive 1 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 40 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Mountshannon Drive 1 (Day)

Road Segment - Angle 1 / Angle 2 : -76 \ 57
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 147.02
Receiver Height : 1.5
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : -76 \ 57
Barrier Height : 16
Barrier Receiver Distance : 3.4
Source Elevation : 92
Receiver Elevation : 92.3
Barrier Elevation : 92.3
Reference Angle : 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 23

Road Data, Segment # Mountshannon Drive 4 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 4 (Day)

Road Segment - Angle 1 / Angle 2	: -26 \ 6
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 147.92
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -4 \ 6
Barrier Height	: 6
Barrier Receiver Distance	: 97.28
Source Elevation	: 92
Receiver Elevation	: 92.3
Barrier Elevation	: 92
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 23

Road Data, Segment # Earl Mulligan Drive (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Earl Mulligan Drive (Day)

Road Segment - Angle 1 / Angle 2	: 57 \ 78
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 152.21
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 57 \ 78
Barrier Height	: 4
Barrier Receiver Distance	: 28.39
Source Elevation	: 92
Receiver Elevation	: 92.3
Barrier Elevation	: 92
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 23

Road Data, Segment # Mountshannon Drive 3 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 3 (Day)

Road Segment - Angle 1 / Angle 2	: -54 \ 0
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 164.02
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -54 \ -13
Barrier Height	: 4.7
Barrier Receiver Distance	: 96.7
Source Elevation	: 92
Receiver Elevation	: 92.3
Barrier Elevation	: 92
Reference Angle	: 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 23

Road Data, Segment # Longfields Drive 1 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 50 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Longfields Drive 1 (Day)

Road Segment - Angle 1 / Angle 2 : 60 \ 70
Wood depth : 0 metres
No of House Rows : 5, First Row Density of 95 %
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 198.06
Receiver Height : 1.5
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : 60 \ 69
Barrier Height : 15
Barrier Receiver Distance : 19.73
Source Elevation : 93
Receiver Elevation : 92.3
Barrier Elevation : 92.6
Reference Angle : 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 23

Road Data, Segment # Mountshannon Drive 2 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 2 (Day)

Road Segment - Angle 1 / Angle 2	: -13 \ 18
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 263.82
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -13 \ 8
Barrier Height	: 16
Barrier Receiver Distance	: 11.3
Source Elevation	: 92
Receiver Elevation	: 92.3
Barrier Elevation	: 92.3
Reference Angle	: 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 23

Road Data, Segment # Longfields Drive 2 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 50 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Longfields Drive 2 (Day)

Road Segment - Angle 1 / Angle 2 : -68 \ 46
Wood depth : 0 metres
No of House Rows : 4, First Row Density of 75 %
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 276.15
Receiver Height : 1.5
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : -38 \ 34
Barrier Height : 6
Barrier Receiver Distance : 74.11
Source Elevation : 93
Receiver Elevation : 92.3
Barrier Elevation : 92
Reference Angle : 0

Results Segment : Mountshannon Drive 5 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.5	1.59	93.59
-----	-----	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
38	65	0.3	63.96	0	-11.64	-8.8	0	0	-11.25	32.27

Segment Leq : 32.28 dBA

Results Segment : Mountshannon Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.5	1.21	93.51
-----	-----	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-76	57	0	63.96	0	-9.91	-1.45	0	0	-20	32.6

Segment Leq : 32.6 dBA

Results Segment : Mountshannon Drive 4 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.5	1.7	93.7
-----	-----	-----	------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-26	-4	0.66	63.96	0	-16.5	-9.7	0	0	0	37.76
-----	----	------	-------	---	-------	------	---	---	---	-------

-4	6	0.3	63.96	0	-12.92	-8.8	0	0	-10.16	32.08
----	---	-----	-------	---	--------	------	---	---	--------	-------

Segment Leq : 38.8 dBA

Results Segment : Earl Mulligan Drive (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.5	1.56	93.56
-----	-----	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

57	78	0.42	65.75	0	-14.29	-11.38	0	0	-7.14	32.94
----	----	------	-------	---	--------	--------	---	---	-------	-------

Segment Leq : 32.94 dBA

Results Segment : Mountshannon Drive 3 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 1.5	! 1.68	! 93.68
-----	-------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-54	-13	0.378	63.96	0	-14.31	-6.88	0	0	-8.27	34.5
-----	-----	-------	-------	---	--------	-------	---	---	-------	------

-13	0	0.66	63.96	0	-17.24	-11.7	0	0	0	35.02
-----	---	------	-------	---	--------	-------	---	---	---	-------

Segment Leq : 37.78 dBA

Results Segment : Longfields Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 1.5	! 1.83	! 94.43
-----	-------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

60	69	0.66	65.75	0	-18.6	-15	0	-14	0	18.15
----	----	------	-------	---	-------	-----	---	-----	---	-------

60	69	0	65.75	0	-11.21	-13.2	0	0	-16.81	24.53
----	----	---	-------	---	--------	-------	---	---	--------	-------

69	70	0.66	65.75	0	-18.6	-1.5	0	-14	0	31.65
----	----	------	-------	---	-------	------	---	-----	---	-------

Segment Leq : 31.84 dBA

Results Segment : Mountshannon Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 1.5	! 1.21	! 93.51
-----	-------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-13	8	0	63.96	0	-12.45	-9.32	0	0	-20	22.19
-----	---	---	-------	---	--------	-------	---	---	-----	-------

8	18	0.66	63.96	0	-20.67	-10.2	0	0	0	33.09
---	----	------	-------	---	--------	-------	---	---	---	-------

Segment Leq : 33.43 dBA

Results Segment : Longfields Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 1.5	! 2.31	! 94.31
-----	-------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-68	-38	0.66	65.75	0	-21	-9.4	0	-9	0	26.35
-----	-----	------	-------	---	-----	------	---	----	---	-------

-38	34	0.66	65.75	0	-21	-4.3	0	-9	0	31.45
-----	----	------	-------	---	-----	------	---	----	---	-------

-38	34	0.3	65.75	0	-16.45	-4.2	0	0	-9.69	35.41
-----	----	-----	-------	---	--------	------	---	---	-------	-------

34	46	0.66	65.75	0	-21	-9.8	0	-9	0	25.95
----	----	------	-------	---	-----	------	---	----	---	-------

Segment Leq : 33.47 dBA

Total Leq From All DAYTIME Road Segments : 43.99 dBA

Results Segment : Mountshannon Drive 5 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.50001	1.59	93.59
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
38	65	0.2999997	56.36	0	-11.64	-8.8	0	0	0	-11.25 24.67

Segment Leq : 24.7 dBA

Results Segment : Mountshannon Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.50001	1.21	93.51
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-76	57	0	56.36	0	-9.91	-1.45	0	0	-20	25

Segment Leq : 25.03 dBA

Results Segment : Mountshannon Drive 4 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.50001	1.7	93.7
-----	---------	-----	------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-26	-4	0.6599997	56.36	0	-16.5	-9.7	0	0	0	30.16
-4	6	0.2999997	56.36	0	-12.92	-8.8	0	0	-10.16	24.48

Segment Leq : 31.2 dBA

Results Segment : Earl Mulligan Drive (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.50001	1.56	93.56
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
57	78	0.4199997	58.15	0	-14.29	-11.38	0	0	-7.14	25.34

Segment Leq : 25.37 dBA

Results Segment : Mountshannon Drive 3 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.50001	1.68	93.68
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-54	-13	0.3779997		56.36	0	-14.31	-6.88	0	0	-8.27 26.9

Segment Leq : 30.18 dBA

Results Segment : Longfields Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.50001	1.83	94.43
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
60	69	0.6599997		58.15	0	-18.6	-15	0	-14	0 10.55
60	69	0	58.15	0	-11.21	-13.2	0	0	-16.81	16.93
69	70	0.6599997		58.15	0	-18.6	-1.5	0	-14	0 24.05

Segment Leq : 24.26 dBA

Results Segment : Mountshannon Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 1.50001	! 1.21	! 93.51
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-13	8	0	56.36	0	-12.45	-9.32	0	0	-20	14.59
-----	---	---	-------	---	--------	-------	---	---	-----	-------

Segment Leq : 25.84 dBA

Results Segment : Longfields Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 1.50001	! 2.31	! 94.31
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-68	-38	0.6599997	58.15	0	-21	-9.4	0	-9	0	18.75
-----	-----	-----------	-------	---	-----	------	---	----	---	-------

-38	34	0.6599997	58.15	0	-21	-4.3	0	-9	0	23.85
-----	----	-----------	-------	---	-----	------	---	----	---	-------

-38	34	0.2999997	58.15	0	-16.45	-4.2	0	0	-9.69	27.81
-----	----	-----------	-------	---	--------	------	---	---	-------	-------

34	46	0.6599997	58.15	0	-21	-9.8	0	-9	0	18.35
----	----	-----------	-------	---	-----	------	---	----	---	-------

Segment Leq : 25.87 dBA

Total Leq From All NIGHTTIME Road Segments : 36.41 dBA

Total Leq - FROM ALL SOURCES : DAY: 43.99 dBA
NIGHT: 36.43 dBA

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 24

Road Data, Segment # Earl Mulligan Drive (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Earl Mulligan Drive (Day)

Road Segment - Angle 1 / Angle 2	: 79 \ 86
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 46.22
Receiver Height	: 1.5
Topography	: 1 (Flat Slope; No Barrier)
Source Elevation	: 92
Receiver Elevation	: 92.3
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 24

Road Data, Segment # Mountshannon Drive 1 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 1 (Day)

Road Segment - Angle 1 / Angle 2	: -85 \ -13
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 59.59
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -85 \ -13
Barrier Height	: 16
Barrier Receiver Distance	: 16.56
Source Elevation	: 92
Receiver Elevation	: 92.3
Barrier Elevation	: 92.3
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 24

Road Data, Segment # Mountshannon Drive 5 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 5 (Day)

Road Segment - Angle 1 / Angle 2	: 56 \ 70
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 130.36
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 56 \ 70
Barrier Height	: 16
Barrier Receiver Distance	: 9.62
Source Elevation	: 92
Receiver Elevation	: 92.3
Barrier Elevation	: 92.3
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 24

Road Data, Segment # Mountshannon Drive 2 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 2 (Day)

Road Segment - Angle 1 / Angle 2	: 0 \ 39
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 177.36
Receiver Height	: 1.5
Topography	: 1 (Flat Slope; No Barrier)
Source Elevation	: 92
Receiver Elevation	: 92.3
Reference Angle	: 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 24

Road Data, Segment # Mountshannon Drive 3 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 40 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Mountshannon Drive 3 (Day)

Road Segment - Angle 1 / Angle 2 : -32 \ 24
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 194.93
Receiver Height : 1.5
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : -3 \ 24
Barrier Height : 4.7
Barrier Receiver Distance : 136.18
Source Elevation : 92
Receiver Elevation : 92.3
Barrier Elevation : 92
Reference Angle : 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 24

Road Data, Segment # Mountshannon Drive 4 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 4 (Day)

Road Segment - Angle 1 / Angle 2	: 0 \ 25
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 213.32
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 0 \ 25
Barrier Height	: 4
Barrier Receiver Distance	: 96.76
Source Elevation	: 92
Receiver Elevation	: 92.3
Barrier Elevation	: 92
Reference Angle	: 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 24

Road Data, Segment # Longfields Drive 1 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 50 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Longfields Drive 1 (Day)

Road Segment - Angle 1 / Angle 2 : 51 \ 63
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 298.87
Receiver Height : 1.5
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : 51 \ 63
Barrier Height : 16
Barrier Receiver Distance : 2.4867
Source Elevation : 93
Receiver Elevation : 92.3
Barrier Elevation : 92.3
Reference Angle : 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 24

Road Data, Segment # Longfields Drive 2 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 50 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Longfields Drive 2 (Day)

Road Segment - Angle 1 / Angle 2 : -61 \ 37
Wood depth : 0 metres
No of House Rows : 5, First Row Density of 95 %
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 382.14
Receiver Height : 1.5
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : -28 \ 37
Barrier Height : 16
Barrier Receiver Distance : 7.1093
Source Elevation : 93
Receiver Elevation : 92.3
Barrier Elevation : 92.3
Reference Angle : 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 24

Road Data, Segment # Fallowfield Road (Day)

Car Traffic Volume : 40480 / 3520 Day / Night
Medium Truck Volume : 3220 / 280 Day / Night
Heavy Truck Volume : 2300 / 200 Day / Night
Posted Speed Limit : 80 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 50000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Fallowfield Road (Day)

Road Segment - Angle 1 / Angle 2 : -44 \ 59
Wood depth : 0 metres
No of House Rows : 4, First Row Density of 25 %
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 478.98
Receiver Height : 1.5
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : -44 \ -21
Barrier Height : 10
Barrier Receiver Distance : 26.556
Source Elevation : 92
Receiver Elevation : 92.3
Barrier Elevation : 91.9
Reference Angle : 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 24

Road Data, Segment # Mountshannon Drive 1 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 1 (Day)

Road Segment - Angle 1 / Angle 2	: -13 \ 70
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 59.59
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -13 \ 11
Barrier Height	: 10
Barrier Receiver Distance	: 27.77
Source Elevation	: 92
Receiver Elevation	: 92.3
Barrier Elevation	: 91.9
Reference Angle	: 0

Results Segment : Earl Mulligan Drive (Day)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
79	86	0.66	65.75	0	-8.11	-13.3	0	0	0	44.34

Segment Leq : 44.34 dBA

Results Segment : Mountshannon Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
1.5	! 1.5	! 1.28	! 93.58

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-85	-13	0	63.96	0	-5.99	-4.1	0	0	-19	34.87

Segment Leq : 34.87 dBA

Results Segment : Mountshannon Drive 5 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
1.5	! 1.5	! 1.22	! 93.52

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
56	70	0	63.96	0	-9.39	-11.16	0	0	-20	23.41

Segment Leq : 23.45 dBA

Results Segment : Mountshannon Drive 2 (Day)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	39	0.66	63.96	0	-17.81	-6.9	0	0	0	39.25

Segment Leq : 39.25 dBA

Results Segment : Mountshannon Drive 3 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
1.5	! 1.5	! 1.71	! 93.71

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-32	-3	0.66	63.96	0	-18.49	-8.2	0	0	0	37.27
-3	24	0.378	63.96	0	-15.35	-8.2	0	0	-9.25	31.16

Segment Leq : 38.22 dBA

Results Segment : Mountshannon Drive 4 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
1.5	! 1.5	! 1.64	! 93.64

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	25	0.42	63.96	0	-16.37	-8.76	0	0	-6.93	31.9

Segment Leq : 31.91 dBA

Results Segment : Longfields Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.5	2.19	94.49
-----	-----	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

51	63	0	65.75	0	-12.99	-11.88	0	0	-19	21.88
----	----	---	-------	---	--------	--------	---	---	-----	-------

Segment Leq : 21.94 dBA

Results Segment : Longfields Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.5	2.19	94.49
-----	-----	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-61	-28	0.66	65.75	0	-23.34	-8	0	-13.2	0	21.21
-----	-----	------	-------	---	--------	----	---	-------	---	-------

-28	37	0.66	65.75	0	-23.34	-4.8	0	-13.2	0	24.41
-----	----	------	-------	---	--------	------	---	-------	---	-------

-28	37	0	65.75	0	-14.06	-4.8	0	0	-20	26.89
-----	----	---	-------	---	--------	------	---	---	-----	-------

Segment Leq : 26.12 dBA

Results Segment : Fallowfield Road (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.5	1.62	93.52
-----	-----	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-44	-21	0.66	77.72	0	-24.97	-9.9	0	-5.5	0	37.35
-44	-21	0.06	77.72	0	-15.94	-5.58	0	0	-17.73	38.47
-21	59	0.66	77.72	0	-24.97	-4	0	-5.5	0	43.25

Segment Leq : 44.24 dBA

Results Segment : Mountshannon Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.5	1.74	93.64
-----	-----	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-13	11	0.06	63.96	0	-6.35	-4.98	0	0	-20	32.63
11	70	0.66	63.96	0	-9.94	-5.8	0	0	0	48.22

Segment Leq : 48.34 dBA

Total Leq From All DAYTIME Road Segments : 51.54 dBA

Results Segment : Earl Mulligan Drive (Night)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
79	86	0.6599997	58.15	0	-8.11	-13.3	0	0	0	36.74

Segment Leq : 36.74 dBA

Results Segment : Mountshannon Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
1.5	! 1.50001	! 1.28	! 93.58

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-85	-13	0	56.36	0	-5.99	-4.1	0	0	-19	27.27

Segment Leq : 27.29 dBA

Results Segment : Mountshannon Drive 5 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
1.5	! 1.50001	! 1.22	! 93.52

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
56	70	0	56.36	0	-9.39	-11.16	0	0	-20	15.81

Segment Leq : 16.03 dBA

Results Segment : Mountshannon Drive 2 (Night)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	39	0.6599997	56.36	0	-17.81	-6.9	0	0	0	31.65

Segment Leq : 31.66 dBA

Results Segment : Mountshannon Drive 3 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
1.5	! 1.50001	! 1.71	! 93.71

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-32	-3	0.6599997	56.36	0	-18.49	-8.2	0	0	0	29.67
-3	24	0.3779997	56.36	0	-15.35	-8.2	0	0	-9.25	23.56

Segment Leq : 30.63 dBA

Results Segment : Mountshannon Drive 4 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
1.5	! 1.50001	! 1.64	! 93.64

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	25	0.4199997	56.36	0	-16.37	-8.76	0	0	-6.93	24.3

Segment Leq : 24.33 dBA

Results Segment : Longfields Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.50001	2.19	94.49
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

51	63	0	58.15	0	-12.99	-11.88	0	0	-19	14.28
----	----	---	-------	---	--------	--------	---	---	-----	-------

Segment Leq : 14.59 dBA

Results Segment : Longfields Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.50001	2.19	94.49
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-61	-28	0.6599997	58.15	0	-23.34	-8	0	-13.2	0	13.61
-----	-----	-----------	-------	---	--------	----	---	-------	---	-------

-28	37	0.6599997	58.15	0	-23.34	-4.8	0	-13.2	0	16.81
-----	----	-----------	-------	---	--------	------	---	-------	---	-------

-28	37	0	58.15	0	-14.06	-4.8	0	0	-20	19.29
-----	----	---	-------	---	--------	------	---	---	-----	-------

Segment Leq : 18.57 dBA



Results Segment : Fallowfield Road (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 1.50001	! 1.62	! 93.52
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-44	-21	0.6599997	70.12	0	-24.97	-9.9	0	-5.5	0	29.75
-44	-21	0.0599997	70.12	0	-15.94	-5.58	0	0	-17.73	30.87
-21	59	0.6599997	70.12	0	-24.97	-4	0	-5.5	0	35.65

Segment Leq : 36.64 dBA

Results Segment : Mountshannon Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 1.50001	! 1.74	! 93.64
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-13	11	0.0599997	56.36	0	-6.35	-4.98	0	0	-20	25.03

Segment Leq : 40.74 dBA

Total Leq From All NIGHTTIME Road Segments : 43.94 dBA

Total Leq - FROM ALL SOURCES : DAY: 51.54 dBA
NIGHT: 43.94 dBA



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 25

Road Data, Segment # Earl Mulligan Drive (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 50 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Earl Mulligan Drive (Day)

Road Segment - Angle 1 / Angle 2 : 67 \ 83
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 85.77
Receiver Height : 1.5
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : 74 \ 83
Barrier Height : 6
Barrier Receiver Distance : 66.78
Source Elevation : 92
Receiver Elevation : 92.34
Barrier Elevation : 92
Reference Angle : 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 25

Road Data, Segment # Mountshannon Drive 5 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 5 (Day)

Road Segment - Angle 1 / Angle 2	: 58 \ 73
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 100.03
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 58 \ 73
Barrier Height	: 4
Barrier Receiver Distance	: 20.81
Source Elevation	: 92
Receiver Elevation	: 92.34
Barrier Elevation	: 92
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 25

Road Data, Segment # Mountshannon Drive 1 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 1 (Day)

Road Segment - Angle 1 / Angle 2	: -81 \ 58
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 105.47
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -81 \ 0
Barrier Height	: 16
Barrier Receiver Distance	: 62.4
Source Elevation	: 92
Receiver Elevation	: 92.34
Barrier Elevation	: 92.3
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 25

Road Data, Segment # Mountshannon Drive 3 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 3 (Day)

Road Segment - Angle 1 / Angle 2	: -43 \ 20
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 159
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -19 \ 20
Barrier Height	: 4.7
Barrier Receiver Distance	: 100.1
Source Elevation	: 92
Receiver Elevation	: 92.34
Barrier Elevation	: 92
Reference Angle	: 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 25

Road Data, Segment # Mountshannon Drive 4 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 40 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Mountshannon Drive 4 (Day)

Road Segment - Angle 1 / Angle 2 : 0 \ 27
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 169.53
Receiver Height : 1.5
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : 0 \ 27
Barrier Height : 4
Barrier Receiver Distance : 31.9
Source Elevation : 92
Receiver Elevation : 92.34
Barrier Elevation : 92
Reference Angle : 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 25

Road Data, Segment # Mountshannon Drive 2 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 40 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Mountshannon Drive 2 (Day)

Road Segment - Angle 1 / Angle 2 : -12 \ 28
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 192.91
Receiver Height : 1.5
Topography : 1 (Flat Slope; No Barrier)
Source Elevation : 92
Receiver Elevation : 92.34
Reference Angle : 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 25

Road Data, Segment # Longfields Drive 1 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Longfields Drive 1 (Day)

Road Segment - Angle 1 / Angle 2	: 57 \ 67
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 254.82
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 57 \ 67
Barrier Height	: 16
Barrier Receiver Distance	: 1.89
Source Elevation	: 93
Receiver Elevation	: 92.34
Barrier Elevation	: 92.3
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 25

Road Data, Segment # Longfields Drive 2 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Longfields Drive 2 (Day)

Road Segment - Angle 1 / Angle 2	: -62 \ -21
Wood depth	: 0 metres
No of House Rows	: 5, First Row Density of 95 %
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 342.6
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -62 \ -21
Barrier Height	: 4
Barrier Receiver Distance	: 33.78
Source Elevation	: 93
Receiver Elevation	: 92.34
Barrier Elevation	: 92.3
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 25

Road Data, Segment # Longfields Drive 2 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Longfields Drive 2 (Day)

Road Segment - Angle 1 / Angle 2	: -21 \ 42
Wood depth	: 0 metres
No of House Rows	: 5, First Row Density of 95 %
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 342.6
Receiver Height	: 1.5
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -21 \ 42
Barrier Height	: 16
Barrier Receiver Distance	: 6.24
Source Elevation	: 93
Receiver Elevation	: 92.34
Barrier Elevation	: 92.3
Reference Angle	: 0

Results Segment : Earl Mulligan Drive (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.5	1.76	93.76
-----	-----	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

67	74	0.66	65.75	0	-12.57	-10.1	0	0	0	43.08
----	----	------	-------	---	--------	-------	---	---	---	-------

74	83	0.3	65.75	0	-9.84	-10.5	0	0	-8.79	36.62
----	----	-----	-------	---	-------	-------	---	---	-------	-------

Segment Leq : 43.96 dBA

Results Segment : Mountshannon Drive 5 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.5	1.57	93.57
-----	-----	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

58	73	0.42	63.96	0	-11.7	-12.18	0	0	-7.72	32.36
----	----	------	-------	---	-------	--------	---	---	-------	-------

Segment Leq : 32.37 dBA

Results Segment : Mountshannon Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 1.5	! 1.4	! 93.7
-----	-------	-------	--------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-81	0	0	63.96	0	-8.47	-3.5	0	0	-19.4	32.59
-----	---	---	-------	---	-------	------	---	---	-------	-------

0	58	0.66	63.96	0	-14.06	-5.4	0	0	0	44.5
---	----	------	-------	---	--------	------	---	---	---	------

Segment Leq : 44.77 dBA

Results Segment : Mountshannon Drive 3 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 1.5	! 1.71	! 93.71
-----	-------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-43	-19	0.66	63.96	0	-17.02	-8.8	0	0	0	38.14
-----	-----	------	-------	---	--------	------	---	---	---	-------

-19	20	0.378	63.96	0	-14.13	-6.7	0	0	-9.39	33.74
-----	----	-------	-------	---	--------	------	---	---	-------	-------

Segment Leq : 39.49 dBA

Results Segment : Mountshannon Drive 4 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 1.5	! 1.56	! 93.56
-----	-------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	27	0.42	63.96	0	-14.95	-8.36	0	0	-8.8	31.85

Segment Leq : 31.86 dBA

Results Segment : Mountshannon Drive 2 (Day)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-12	28	0.66	63.96	0	-18.41	-6.6	0	0	0	38.95

Segment Leq : 38.95 dBA

Results Segment : Longfields Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 1.5	! 2.2	! 94.5
-----	-------	-------	--------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
57	67	0	65.75	0	-12.3	-12.6	0	0	-20	20.85

Segment Leq : 20.92 dBA

Results Segment : Longfields Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 1.5	! 2.13	! 94.43
-----	-------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-62	-21	0.66	65.75	0	-22.55	-7.4	0	-13.3	0	22.5
-62	-21	0.42	65.75	0	-19.29	-7.08	0	0	-7.83	31.55

Segment Leq : 22.55 dBA

Results Segment : Longfields Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 1.5	! 2.19	! 94.49
-----	-------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-21	42	0.66	65.75	0	-22.55	-4.6	0	-13.3	0	25.3
-21	42	0	65.75	0	-13.59	-4.8	0	0	-20	27.36

Segment Leq : 25.33 dBA

Total Leq From All DAYTIME Road Segments : 48.78 dBA

Results Segment : Earl Mulligan Drive (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.50001	1.76	93.76
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
67	74	0.6599997	58.15	0	-12.57	-10.1	0	0	0	35.48
74	83	0.2999997	58.15	0	-9.84	-10.5	0	0	-8.79	29.02

Segment Leq : 36.37 dBA

Results Segment : Mountshannon Drive 5 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	1.50001	1.57	93.57
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
58	73	0.4199997	56.36	0	-11.7	-12.18	0	0	-7.72	24.76

Segment Leq : 24.79 dBA

Results Segment : Mountshannon Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 1.50001	! 1.4	! 93.7
-----	-----------	-------	--------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-81	0	0	56.36	0	-8.47	-3.5	0	0	-19.4	24.99
-----	---	---	-------	---	-------	------	---	---	-------	-------

Segment Leq : 37.17 dBA

Results Segment : Mountshannon Drive 3 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 1.50001	! 1.71	! 93.71
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-43	-19	0.6599997	56.36	0	-17.02	-8.8	0	0	0	30.54
-----	-----	-----------	-------	---	--------	------	---	---	---	-------

-19	20	0.3779997	56.36	0	-14.13	-6.7	0	0	-9.39	26.14
-----	----	-----------	-------	---	--------	------	---	---	-------	-------

Segment Leq : 31.89 dBA

Results Segment : Mountshannon Drive 4 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 1.50001	! 1.56	! 93.56
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	27	0.4199997	56.36	0	-14.95	-8.36	0	0	0	24.25

Segment Leq : 24.28 dBA

Results Segment : Mountshannon Drive 2 (Night)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-12	28	0.6599997	56.36	0	-18.41	-6.6	0	0	0	31.35

Segment Leq : 31.36 dBA

Results Segment : Longfields Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 1.50001	! 2.2	! 94.5
-----	-----------	-------	--------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
57	67	0	58.15	0	-12.3	-12.6	0	0	-20	13.25

Segment Leq : 13.64 dBA

Results Segment : Longfields Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 1.50001	! 2.13	! 94.43
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-62	-21	0.6599997	58.15	0	-22.55	-7.4	0	-13.3	0	14.9
-62	-21	0.4199997	58.15	0	-19.29	-7.08	0	0	-7.83	23.95

Segment Leq : 15.17 dBA

Results Segment : Longfields Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 1.50001	! 2.19	! 94.49
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-21	42	0.6599997	58.15	0	-22.55	-4.6	0	-13.3	0	17.7
-21	42	0	58.15	0	-13.59	-4.8	0	0	-20	19.76

Segment Leq : 17.85 dBA

Total Leq From All NIGHTTIME Road Segments : 41.19 dBA

Total Leq - FROM ALL SOURCES : DAY: 48.78 dBA
NIGHT: 41.2 dBA



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 26

Road Data, Segment # Earl Mulligan Drive (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 50 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Earl Mulligan Drive (Day)

Road Segment - Angle 1 / Angle 2 : 79 \ 87
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 43.79
Receiver Height : 9.3486
Topography : 1 (Flat Slope; No Barrier)
Source Elevation : 92
Receiver Elevation : 92.3
Reference Angle : 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 26

Road Data, Segment # Mountshannon Drive 1 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 40 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Mountshannon Drive 1 (Day)

Road Segment - Angle 1 / Angle 2 : 0 \ 72
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 54.55
Receiver Height : 9.3486
Topography : 1 (Flat Slope; No Barrier)
Source Elevation : 92
Receiver Elevation : 92.3
Reference Angle : 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 26

Road Data, Segment # Mountshannon Drive 2 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 40 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Mountshannon Drive 2 (Day)

Road Segment - Angle 1 / Angle 2 : 0 \ 40
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 179.19
Receiver Height : 9.3486
Topography : 1 (Flat Slope; No Barrier)
Source Elevation : 92
Receiver Elevation : 92.3
Reference Angle : 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 26

Road Data, Segment # Mountshannon Drive 3 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 40 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Mountshannon Drive 3 (Day)

Road Segment - Angle 1 / Angle 2 : -31 \ 24
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 201.22
Receiver Height : 9.3486
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : -3 \ 24
Barrier Height : 4.7
Barrier Receiver Distance : 142
Source Elevation : 92
Receiver Elevation : 92.3
Barrier Elevation : 92
Reference Angle : 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 26

Road Data, Segment # Mountshannon Drive 4 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 40 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Mountshannon Drive 4 (Day)

Road Segment - Angle 1 / Angle 2 : 0 \ 17
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 219.25
Receiver Height : 9.3486
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : 0 \ 17
Barrier Height : 4
Barrier Receiver Distance : 86.9
Source Elevation : 92
Receiver Elevation : 92.3
Barrier Elevation : 92
Reference Angle : 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 26

Road Data, Segment # Longfields Drive 2 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 50 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Longfields Drive 2 (Day)

Road Segment - Angle 1 / Angle 2 : -61 \ -31
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 384.57
Receiver Height : 9.3486
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : -61 \ -31
Barrier Height : 4
Barrier Receiver Distance : 75.2
Source Elevation : 93
Receiver Elevation : 92.3
Barrier Elevation : 92
Reference Angle : 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 26

Road Data, Segment # Fallowfield Road (Day)

Car Traffic Volume : 40480 / 3520 Day / Night
Medium Truck Volume : 3220 / 280 Day / Night
Heavy Truck Volume : 2300 / 200 Day / Night
Posted Speed Limit : 80 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 50000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Fallowfield Road (Day)

Road Segment - Angle 1 / Angle 2 : -44 \ 60
Wood depth : 0 metres
No of House Rows : 4, First Row Density of 95 %
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 476.58
Receiver Height : 9.3486
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : -44 \ 60
Barrier Height : 6
Barrier Receiver Distance : 92
Source Elevation : 92
Receiver Elevation : 92.3
Barrier Elevation : 92
Reference Angle : 0



Results Segment : Earl Mulligan Drive (Day)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
79	87	0.424542		65.75	0	-6.63	-12.73	0	0	0	46.39

Segment Leq : 46.39 dBA

Results Segment : Mountshannon Drive 1 (Day)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
0	72	0.424542		63.96	0	-7.99	-4.52	0	0	0	51.45

Segment Leq : 51.45 dBA

Results Segment : Mountshannon Drive 2 (Day)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
0	40	0.424542		63.96	0	-15.35	-6.66	0	0	0	41.95

Segment Leq : 41.95 dBA

Results Segment : Mountshannon Drive 3 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	9.3486	7.25	99.25
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
-31	-3	0.424542		63.96	0	-16.06	-8.16	0	0	0	39.74
-3	24	0.142542		63.96	0	-12.88	-8.2	0	0	-5.26	37.62

Segment Leq : 41.82 dBA

Results Segment : Mountshannon Drive 4 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	9.3486	4.73	96.73
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
0	17	0.424542		63.96	0	-16.59	-10.5	0	0	0	36.87

Segment Leq : 36.87 dBA

Results Segment : Longfields Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
-------------------	-----------------------	----------------------	--------------------------------

1.5	! 9.3486	! 3.9	! 95.9
-----	----------	-------	--------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
-61	-31	0.424542		65.75	0	-20.07	-8.59	0	0	0	37.09

Segment Leq : 37.09 dBA

Results Segment : Fallowfield Road (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
-------------------	-----------------------	----------------------	--------------------------------

1.5	! 9.3486	! 3.07	! 95.07
-----	----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
-44	60	0.424542		77.72	0	-21.4	-2.66	0	-11.4	0	42.26
-44	60	0.424542		77.72	0	-21.4	-2.66	0	0	0	53.66

Segment Leq : 42.26 dBA

Total Leq From All DAYTIME Road Segments : 53.82 dBA



Results Segment : Earl Mulligan Drive (Night)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
79	87	0.4245417	58.15	0	-6.63	-12.73	0	0	0	38.79

Segment Leq : 38.79 dBA

Results Segment : Mountshannon Drive 1 (Night)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	72	0.4245417	56.36	0	-7.99	-4.52	0	0	0	43.85

Segment Leq : 43.85 dBA

Results Segment : Mountshannon Drive 2 (Night)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	40	0.4245417	56.36	0	-15.35	-6.66	0	0	0	34.35

Segment Leq : 34.35 dBA

Results Segment : Mountshannon Drive 3 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	9.34861	7.25	99.25
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-31	-3	0.4245417	56.36	0	-16.06	-8.16	0	0	0	32.14
-3	24	0.1425417	56.36	0	-12.88	-8.2	0	0	-5.26	30.02

Segment Leq : 34.22 dBA

Results Segment : Mountshannon Drive 4 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	9.34861	4.73	96.73
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	17	0.4245417	56.36	0	-16.59	-10.5	0	0	0	29.27

Segment Leq : 29.28 dBA

Results Segment : Longfields Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 9.34861	! 3.9	! 95.9
-----	-----------	-------	--------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
-61	-31	0.4245417		58.15	0	-20.07	-8.59	0	0	0	29.49

Segment Leq : 29.5 dBA

Results Segment : Fallowfield Road (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 9.34861	! 3.07	! 95.07
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
-44	60	0.4245417		70.12	0	-21.4	-2.66	0	-11.4	0	34.66
-44	60	0.4245417		70.12	0	-21.4	-2.66	0	0	0	46.06

Segment Leq : 34.66 dBA

Total Leq From All NIGHTTIME Road Segments : 46.22 dBA

Total Leq - FROM ALL SOURCES : DAY: 53.82 dBA
NIGHT: 46.22 dBA



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 27

Road Data, Segment # Earl Mulligan Drive (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 50 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Earl Mulligan Drive (Day)

Road Segment - Angle 1 / Angle 2 : 64 \ 82
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 97.37
Receiver Height : 9.3486
Topography : 1 (Flat Slope; No Barrier)
Source Elevation : 92
Receiver Elevation : 92.34
Reference Angle : 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 27

Road Data, Segment # Mountshannon Drive 1 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 1 (Day)

Road Segment - Angle 1 / Angle 2	: 0 \ 56
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 117.01
Receiver Height	: 9.3486
Topography	: 1 (Flat Slope; No Barrier)
Source Elevation	: 92
Receiver Elevation	: 92.34
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 27

Road Data, Segment # Mountshannon Drive 3 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 3 (Day)

Road Segment - Angle 1 / Angle 2	: -46 \ 18
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 151.99
Receiver Height	: 9.3486
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -26 \ 18
Barrier Height	: 4.7
Barrier Receiver Distance	: 57.8
Source Elevation	: 92
Receiver Elevation	: 92.34
Barrier Elevation	: 92
Reference Angle	: 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 27

Road Data, Segment # Mountshannon Drive 4 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 40 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Mountshannon Drive 4 (Day)

Road Segment - Angle 1 / Angle 2 : 0 \ 27
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 159.49
Receiver Height : 9.3486
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : 0 \ 27
Barrier Height : 4
Barrier Receiver Distance : 23.1
Source Elevation : 92
Receiver Elevation : 92.34
Barrier Elevation : 92
Reference Angle : 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 27

Road Data, Segment # Mountshannon Drive 2 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 2 (Day)

Road Segment - Angle 1 / Angle 2	: -15 \ 25
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 199.88
Receiver Height	: 9.3486
Topography	: 1 (Flat Slope; No Barrier)
Source Elevation	: 92
Receiver Elevation	: 92.34
Reference Angle	: 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 27

Road Data, Segment # Longfields Drive 2 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 50 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Longfields Drive 2 (Day)

Road Segment - Angle 1 / Angle 2 : -63 \ -31
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 330.99
Receiver Height : 9.3486
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : -63 \ -31
Barrier Height : 4
Barrier Receiver Distance : 44.5
Source Elevation : 93
Receiver Elevation : 92.34
Barrier Elevation : 92
Reference Angle : 0



Results Segment : Earl Mulligan Drive (Day)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
64	82	0.424542		65.75	0	-11.57	-12.38	0	0	0	41.8

Segment Leq : 41.8 dBA

Results Segment : Mountshannon Drive 1 (Day)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
0	56	0.424542		63.96	0	-12.71	-5.42	0	0	0	45.83

Segment Leq : 45.83 dBA

Results Segment : Mountshannon Drive 3 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
1.5	! 9.3486	! 4.61	! 96.61

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
-46	-26	0.424542		63.96	0	-14.33	-10.22	0	0	0	39.41
-26	18	0.424542		63.96	0	-14.33	-6.4	0	0	0	43.23

Segment Leq : 44.74 dBA

Results Segment : Mountshannon Drive 4 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	9.3486	2.69	94.69
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	27	0.424542		63.96	0	-14.62	-8.36	0	0	40.98

Segment Leq : 40.98 dBA

Results Segment : Mountshannon Drive 2 (Day)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-15	25	0.424542		63.96	0	-16.02	-6.6	0	0	41.34

Segment Leq : 41.34 dBA

Results Segment : Longfields Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	9.3486	3.47	95.47
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-63	-31	0.424542		65.75	0	-19.14	-8.39	0	0	38.22

Segment Leq : 38.22 dBA

Total Leq From All DAYTIME Road Segments : 50.64 dBA

Results Segment : Earl Mulligan Drive (Night)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
64	82	0.4245417		58.15	0	-11.57	-12.38	0	0	0	34.2

Segment Leq : 34.2 dBA

Results Segment : Mountshannon Drive 1 (Night)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
0	56	0.4245417		56.36	0	-12.71	-5.42	0	0	0	38.23

Segment Leq : 38.23 dBA

Results Segment : Mountshannon Drive 3 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
1.5	! 9.34861	! 4.61	! 96.61

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
-46	-26	0.4245417		56.36	0	-14.33	-10.22	0	0	0	31.81
-26	18	0.4245417		56.36	0	-14.33	-6.4	0	0	0	35.63

Segment Leq : 37.14 dBA



Results Segment : Mountshannon Drive 4 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 9.34861	! 2.69	! 94.69
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	27	0.4245417	56.36	0	-14.62	-8.36	0	0	0	33.38

Segment Leq : 33.38 dBA

Results Segment : Mountshannon Drive 2 (Night)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-15	25	0.4245417	56.36	0	-16.02	-6.6	0	0	0	33.74

Segment Leq : 33.74 dBA

Results Segment : Longfields Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 9.34861	! 3.47	! 95.47
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-63	-31	0.4245417	58.15	0	-19.14	-8.39	0	0	0	30.62

Segment Leq : 30.63 dBA

Total Leq From All NIGHTTIME Road Segments : 43.05 dBA

Total Leq - FROM ALL SOURCES : DAY: 50.64 dBA
NIGHT: 43.06 dBA

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 28

Road Data, Segment # Mountshannon Drive 1 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 1 (Day)

Road Segment - Angle 1 / Angle 2	: -84 \ 75
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 62.31
Receiver Height	: 9.3486
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -84 \ 75
Barrier Height	: 10
Barrier Receiver Distance	: 30
Source Elevation	: 92
Receiver Elevation	: 92.35
Barrier Elevation	: 91.9
Reference Angle	: 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 28

Road Data, Segment # Mountshannon Drive 2 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 40 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Mountshannon Drive 2 (Day)

Road Segment - Angle 1 / Angle 2 : 0 \ 19
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 233.03
Receiver Height : 9.3486
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : 0 \ 19
Barrier Height : 16
Barrier Receiver Distance : 43.6
Source Elevation : 92
Receiver Elevation : 92.35
Barrier Elevation : 92.3
Reference Angle : 0

Results Segment : Mountshannon Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 9.3486	! 5.55	! 97.45
-----	----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-84	75	0	63.96	0	-6.18	-0.5	0	0	-12.1	45.18
-----	----	---	-------	---	-------	------	---	---	-------	-------

Segment Leq : 45.18 dBA

Results Segment : Mountshannon Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 9.3486	! 2.73	! 95.03
-----	----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

0	19	0	63.96	0	-11.91	-9.76	0	0	-17.41	24.88
---	----	---	-------	---	--------	-------	---	---	--------	-------

Segment Leq : 24.91 dBA

Total Leq From All DAYTIME Road Segments : 45.22 dBA

Results Segment : Mountshannon Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	9.34861	5.55	97.45
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-84	75	0	56.36	0	-6.18	-0.5	0	0	-12.1	37.58

Segment Leq : 37.58 dBA

Results Segment : Mountshannon Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	9.34861	2.73	95.03
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	19	0	56.36	0	-11.91	-9.76	0	0	-17.41	17.28

Segment Leq : 17.44 dBA

Total Leq From All NIGHTTIME Road Segments : 37.64 dBA

Total Leq - FROM ALL SOURCES : DAY: 45.22 dBA
NIGHT: 37.66 dBA

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 29

Road Data, Segment # Earl Mulligan Drive (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Earl Mulligan Drive (Day)

Road Segment - Angle 1 / Angle 2	: 72 \ 83
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 89.35
Receiver Height	: 9.3486
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 72 \ 83
Barrier Height	: 16
Barrier Receiver Distance	: 16.2
Source Elevation	: 92
Receiver Elevation	: 92.3
Barrier Elevation	: 92.3
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 29

Road Data, Segment # Mountshannon Drive 5 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 5 (Day)

Road Segment - Angle 1 / Angle 2	: 42 \ 62
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 162.66
Receiver Height	: 9.3486
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 42 \ 62
Barrier Height	: 16
Barrier Receiver Distance	: 10
Source Elevation	: 92
Receiver Elevation	: 92.3
Barrier Elevation	: 92.3
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 29

Road Data, Segment # Mountshannon Drive 4 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 4 (Day)

Road Segment - Angle 1 / Angle 2	: -13 \ 11
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 214.92
Receiver Height	: 9.3486
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -13 \ 11
Barrier Height	: 16
Barrier Receiver Distance	: 14
Source Elevation	: 92
Receiver Elevation	: 92.3
Barrier Elevation	: 92.3
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 29

Road Data, Segment # Mountshannon Drive 3 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 3 (Day)

Road Segment - Angle 1 / Angle 2	: -39 \ -9
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 217.87
Receiver Height	: 9.3486
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -39 \ -9
Barrier Height	: 16
Barrier Receiver Distance	: 60.7
Source Elevation	: 92
Receiver Elevation	: 92.3
Barrier Elevation	: 92.3
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 29

Road Data, Segment # Mountshannon Drive 2 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 2 (Day)

Road Segment - Angle 1 / Angle 2	: 19 \ 32
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 236.88
Receiver Height	: 9.3486
Topography	: 7 (Flat Slope; With Barrier)
Source Elevation	: 92
Receiver Elevation	: 92.3
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 29

Road Data, Segment # Longfields Drive 1 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Longfields Drive 1 (Day)

Road Segment - Angle 1 / Angle 2	: 51 \ 64
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 267.22
Receiver Height	: 9.3486
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 51 \ 64
Barrier Height	: 15
Barrier Receiver Distance	: 31.4
Source Elevation	: 93
Receiver Elevation	: 92.3
Barrier Elevation	: 92.3
Reference Angle	: 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 29

Road Data, Segment # Longfields Drive 2 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 50 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Longfields Drive 2 (Day)

Road Segment - Angle 1 / Angle 2 : -65 \ 24
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 339.01
Receiver Height : 9.3486
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : -65 \ 24
Barrier Height : 16
Barrier Receiver Distance : 15.5
Source Elevation : 93
Receiver Elevation : 92.3
Barrier Elevation : 92.6
Reference Angle : 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 29

Road Data, Segment # Mountshannon Drive 3 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 40 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Mountshannon Drive 3 (Day)

Road Segment - Angle 1 / Angle 2 : -9 \ 8
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 217.87
Receiver Height : 9.3486
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : -9 \ 8
Barrier Height : 16
Barrier Receiver Distance : 17
Source Elevation : 92
Receiver Elevation : 92.3
Barrier Elevation : 92.3
Reference Angle : 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 29

Road Data, Segment # Longfields Drive 2 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Longfields Drive 2 (Day)

Road Segment - Angle 1 / Angle 2	: 24 \ 36
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 339.01
Receiver Height	: 9.3486
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 24 \ 36
Barrier Height	: 15
Barrier Receiver Distance	: 59.5
Source Elevation	: 93
Receiver Elevation	: 92.3
Barrier Elevation	: 92.6
Reference Angle	: 0

Results Segment : Earl Mulligan Drive (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	9.3486	2.68	94.98
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

72	83	0	65.75	0	-7.75	-12.24	0	0	-13.53	32.23
----	----	---	-------	---	-------	--------	---	---	--------	-------

Segment Leq : 32.24 dBA

Results Segment : Mountshannon Drive 5 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	9.3486	1.7	94
-----	--------	-----	----

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

42	62	0	63.96	0	-10.35	-9.5	0	0	-18.67	25.44
----	----	---	-------	---	--------	------	---	---	--------	-------

Segment Leq : 25.46 dBA

Results Segment : Mountshannon Drive 4 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	9.3486	1.73	94.03
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-13	11	0	63.96	0	-11.56	-8.78	0	0	-20	23.62

Segment Leq : 23.66 dBA

Results Segment : Mountshannon Drive 3 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	9.3486	3.47	95.77
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-39	-9	0	63.96	0	-11.62	-7.8	0	0	-17.27	27.27

Segment Leq : 27.29 dBA

Results Segment : Mountshannon Drive 2 (Day)

Source Height : m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

0	32	0.424542	63.96	0	-17.07	-7.66	0	0	0	19 39.23
---	----	----------	-------	---	--------	-------	---	---	---	-------------

Segment Leq : 39.23 dBA

Results Segment : Longfields Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	9.3486	3.04	95.34
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

51	64	0	65.75	0	-12.51	-11.52	0	0	-12.39	29.33
----	----	---	-------	---	--------	--------	---	---	--------	-------

Segment Leq : 29.34 dBA

Results Segment : Longfields Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	9.3486	2.23	94.83
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-65	24	0	65.75	0	-13.54	-3	0	0	-19.05	30.16
-----	----	---	-------	---	--------	----	---	---	--------	-------

Segment Leq : 30.17 dBA

Results Segment : Mountshannon Drive 3 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	9.3486	1.84	94.14
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-9	8	0	63.96	0	-11.62	-10.28	0	0	-19.83	22.23

Segment Leq : 22.28 dBA

Results Segment : Longfields Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	9.3486	3.15	95.75
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
24	36	0	65.75	0	-13.54	-11.88	0	0	-13.05	27.28

Segment Leq : 27.3 dBA

Total Leq From All DAYTIME Road Segments : 41.4 dBA

Results Segment : Earl Mulligan Drive (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	9.34861	2.68	94.98
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
72	83	0	58.15	0	-7.75	-12.24	0	0	-13.53	24.63

Segment Leq : 24.66 dBA

Results Segment : Mountshannon Drive 5 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	9.34861	1.7	94
-----	---------	-----	----

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
42	62	0	56.36	0	-10.35	-9.5	0	0	-18.67	17.84

Segment Leq : 17.98 dBA

Results Segment : Mountshannon Drive 4 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	9.34861	1.73	94.03
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-13	11	0	56.36	0	-11.56	-8.78	0	0	-20	16.02
-----	----	---	-------	---	--------	-------	---	---	-----	-------

Segment Leq : 16.23 dBA

Results Segment : Mountshannon Drive 3 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	9.34861	3.47	95.77
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-39	-9	0	56.36	0	-11.62	-7.8	0	0	-17.27	19.67
-----	----	---	-------	---	--------	------	---	---	--------	-------

Segment Leq : 19.76 dBA

Results Segment : Longfields Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 9.34861	! 3.04	! 95.34
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

51	64	0	58.15	0	-12.51	-11.52	0	0	-12.39	21.73
----	----	---	-------	---	--------	--------	---	---	--------	-------

Segment Leq : 21.79 dBA

Results Segment : Longfields Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 9.34861	! 2.23	! 94.83
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-65	24	0	58.15	0	-13.54	-3	0	0	-19.05	22.56
-----	----	---	-------	---	--------	----	---	---	--------	-------

Segment Leq : 22.61 dBA

Results Segment : Mountshannon Drive 3 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	9.34861	1.84	94.14
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-9	8	0	56.36	0	-11.62	-10.28	0	0	-19.83	14.63

Segment Leq : 14.92 dBA

Results Segment : Longfields Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	9.34861	3.15	95.75
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
24	36	0	58.15	0	-13.54	-11.88	0	0	-13.05	19.68

Segment Leq : 19.77 dBA

Total Leq From All NIGHTTIME Road Segments : 33.85 dBA

Total Leq - FROM ALL SOURCES : DAY: 41.41 dBA
NIGHT: 33.89 dBA

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 30

Road Data, Segment # Earl Mulligan Drive (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Earl Mulligan Drive (Day)

Road Segment - Angle 1 / Angle 2	: 66 \ 81
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 113.02
Receiver Height	: 9.3486
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 66 \ 81
Barrier Height	: 16
Barrier Receiver Distance	: 16.8
Source Elevation	: 92
Receiver Elevation	: 92.35
Barrier Elevation	: 92.3
Reference Angle	: 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 30

Road Data, Segment # Mountshannon Drive 5 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 40 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Mountshannon Drive 5 (Day)

Road Segment - Angle 1 / Angle 2 : 41 \ 63
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 145.04
Receiver Height : 9.3486
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : 41 \ 63
Barrier Height : 16
Barrier Receiver Distance : 20.6
Source Elevation : 92
Receiver Elevation : 92.35
Barrier Elevation : 92.3
Reference Angle : 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 30

Road Data, Segment # Mountshannon Drive 4 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 4 (Day)

Road Segment - Angle 1 / Angle 2	: -17 \ 10
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 189.12
Receiver Height	: 9.3486
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -11 \ 10
Barrier Height	: 16
Barrier Receiver Distance	: 27.9
Source Elevation	: 92
Receiver Elevation	: 92.35
Barrier Elevation	: 92.3
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 30

Road Data, Segment # Mountshannon Drive 3 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 3 (Day)

Road Segment - Angle 1 / Angle 2	: -45 \ -26
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 196.86
Receiver Height	: 9.3486
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -45 \ -26
Barrier Height	: 16
Barrier Receiver Distance	: 40.4
Source Elevation	: 92
Receiver Elevation	: 92.35
Barrier Elevation	: 92.3
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 30

Road Data, Segment # Longfields Drive 1 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Longfields Drive 1 (Day)

Road Segment - Angle 1 / Angle 2	: 54 \ 66
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 240.98
Receiver Height	: 9.3486
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 54 \ 66
Barrier Height	: 15
Barrier Receiver Distance	: 29
Source Elevation	: 93
Receiver Elevation	: 92.35
Barrier Elevation	: 92.6
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 30

Road Data, Segment # Mountshannon Drive 2 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 2 (Day)

Road Segment - Angle 1 / Angle 2	: 19 \ 27
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 246.53
Receiver Height	: 9.3486
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 19 \ 27
Barrier Height	: 16
Barrier Receiver Distance	: 38.4
Source Elevation	: 92
Receiver Elevation	: 92.35
Barrier Elevation	: 92.3
Reference Angle	: 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 30

Road Data, Segment # Longfields Drive 2 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 50 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Longfields Drive 2 (Day)

Road Segment - Angle 1 / Angle 2 : -66 \ 5
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 315.34
Receiver Height : 9.3486
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : -66 \ 5
Barrier Height : 16
Barrier Receiver Distance : 29.66
Source Elevation : 93
Receiver Elevation : 92.35
Barrier Elevation : 92.3
Reference Angle : 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 30

Road Data, Segment # Mountshannon Drive 3 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 3 (Day)

Road Segment - Angle 1 / Angle 2	: -26 \ 0
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 196.86
Receiver Height	: 9.3486
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -26 \ 0
Barrier Height	: 4
Barrier Receiver Distance	: 61.1
Source Elevation	: 92
Receiver Elevation	: 92.35
Barrier Elevation	: 92
Reference Angle	: 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 30

Road Data, Segment # Longfields Drive 2 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 50 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Longfields Drive 2 (Day)

Road Segment - Angle 1 / Angle 2 : 5 \ 40
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 315.34
Receiver Height : 9.3486
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : 5 \ 40
Barrier Height : 15
Barrier Receiver Distance : 66.1
Source Elevation : 93
Receiver Elevation : 92.35
Barrier Elevation : 92.65
Reference Angle : 0

Results Segment : Earl Mulligan Drive (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	9.3486	2.42	94.72
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
66	81	0	65.75	0	-8.77	-10.8	0	0	-14.04	32.14

Segment Leq : 32.15 dBA

Results Segment : Mountshannon Drive 5 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	9.3486	2.36	94.66
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
41	63	0	63.96	0	-9.85	-9.14	0	0	-17.93	27.04

Segment Leq : 27.06 dBA

Results Segment : Mountshannon Drive 4 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	9.3486	2.41	94.71
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-17	-11	0.424542	63.96	0	-15.68	-12.6	0	0	0	35.68
-11	10	0	63.96	0	-11.01	-9.32	0	0	-18.69	24.94

Segment Leq : 36.03 dBA

Results Segment : Mountshannon Drive 3 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	9.3486	2.88	95.18
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-45	-26	0	63.96	0	-11.18	-9.76	0	0	-17.1	25.92

Segment Leq : 25.94 dBA

Results Segment : Longfields Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 9.3486	! 2.77	! 95.37
-----	----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

54	66	0	65.75	0	-12.06	-11.88	0	0	-13.18	28.63
----	----	---	-------	---	--------	--------	---	---	--------	-------

Segment Leq : 28.64 dBA

Results Segment : Mountshannon Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 9.3486	! 2.48	! 94.78
-----	----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

19	27	0	63.96	0	-12.16	-13.8	0	0	-14.77	23.23
----	----	---	-------	---	--------	-------	---	---	--------	-------

Segment Leq : 23.27 dBA

Results Segment : Longfields Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	9.3486	2.88	95.18
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-66	5	0	65.75	0	-13.23	-4.1	0	0	-15.69	32.73
-----	---	---	-------	---	--------	------	---	---	--------	-------

Segment Leq : 32.73 dBA

Results Segment : Mountshannon Drive 3 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	9.3486	4.04	96.04
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-26	0	0.424542	63.96	0	-15.93	-8.56	0	0	0	39.47
-----	---	----------	-------	---	--------	-------	---	---	---	-------

Segment Leq : 39.47 dBA



Results Segment : Longfields Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
----------------------	----------------------------	---------------------------	-------------------------------------

1.5	! 9.3486	! 3.36	! 96.01
-----	----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

5	40	0	65.75	0	-13.23	-7.1	0	0	-14.14	31.28
---	----	---	-------	---	--------	------	---	---	--------	-------

Segment Leq : 31.29 dBA

Total Leq From All DAYTIME Road Segments : 42.92 dBA



Results Segment : Earl Mulligan Drive (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)

1.5 ! 9.34861 ! 2.42 ! 94.72

Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

66 81 0 58.15 0 -8.77 -10.8 0 0 -14.04 24.54

Segment Leq : 24.57 dBA

Results Segment : Mountshannon Drive 5 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)

1.5 ! 9.34861 ! 2.36 ! 94.66

Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

41 63 0 56.36 0 -9.85 -9.14 0 0 -17.93 19.44

Segment Leq : 19.54 dBA

Results Segment : Mountshannon Drive 4 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	9.34861	2.41	94.71
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-17	-11	0.4245417	56.36	0	-15.68	-12.6	0	0	0	28.08
-11	10	0	56.36	0	-11.01	-9.32	0	0	-18.69	17.34

Segment Leq : 28.44 dBA

Results Segment : Mountshannon Drive 3 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	9.34861	2.88	95.18
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-45	-26	0	56.36	0	-11.18	-9.76	0	0	-17.1	18.32

Segment Leq : 18.45 dBA

Results Segment : Longfields Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	9.34861	2.77	95.37
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
54	66	0	58.15	0	-12.06	-11.88	0	0	-13.18	21.03

Segment Leq : 21.1 dBA

Results Segment : Mountshannon Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	9.34861	2.48	94.78
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
19	27	0	56.36	0	-12.16	-13.8	0	0	-14.77	15.63

Segment Leq : 15.86 dBA

Results Segment : Longfields Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	9.34861	2.88	95.18
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-66	5	0	58.15	0	-13.23	-4.1	0	0	-15.69	25.13
-----	---	---	-------	---	--------	------	---	---	--------	-------

Segment Leq : 25.16 dBA

Results Segment : Mountshannon Drive 3 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	9.34861	4.04	96.04
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-26	0	0.4245417	56.36	0	-15.93	-8.56	0	0	0	31.87
-----	---	-----------	-------	---	--------	-------	---	---	---	-------

Segment Leq : 31.88 dBA



Results Segment : Longfields Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
-------------------	-----------------------	----------------------	--------------------------------

1.5	! 9.34861	! 3.36	! 96.01
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

5	40	0	58.15	0	-13.23	-7.1	0	0	-14.14	23.68
---	----	---	-------	---	--------	------	---	---	--------	-------

Segment Leq : 23.72 dBA

Total Leq From All NIGHTTIME Road Segments : 35.36 dBA

Total Leq - FROM ALL SOURCES : DAY: 42.93 dBA
NIGHT: 35.39 dBA

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 31

Road Data, Segment # Mountshannon Drive 5 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 5 (Day)

Road Segment - Angle 1 / Angle 2	: 42 \ 67
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 111.8
Receiver Height	: 9.3486
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 42 \ 67
Barrier Height	: 6
Barrier Receiver Distance	: 40.9
Source Elevation	: 92
Receiver Elevation	: 92.3
Barrier Elevation	: 92
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 31

Road Data, Segment # Earl Mulligan Drive (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Earl Mulligan Drive (Day)

Road Segment - Angle 1 / Angle 2	: 58 \ 79
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 143.1
Receiver Height	: 9.3486
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 58 \ 79
Barrier Height	: 4
Barrier Receiver Distance	: 22.9
Source Elevation	: 92
Receiver Elevation	: 92.3
Barrier Elevation	: 92
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 31

Road Data, Segment # Mountshannon Drive 4 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 4 (Day)

Road Segment - Angle 1 / Angle 2	: -22 \ 11
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 148.13
Receiver Height	: 9.3486
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 1 \ 11
Barrier Height	: 6
Barrier Receiver Distance	: 96.9
Source Elevation	: 92
Receiver Elevation	: 92.3
Barrier Elevation	: 92
Reference Angle	: 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 31

Road Data, Segment # Mountshannon Drive 3 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 40 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Mountshannon Drive 3 (Day)

Road Segment - Angle 1 / Angle 2 : -53 \ 0
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 159.87
Receiver Height : 9.3486
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : -53 \ -7
Barrier Height : 4
Barrier Receiver Distance : 44.4
Source Elevation : 92
Receiver Elevation : 92.3
Barrier Elevation : 92
Reference Angle : 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 31

Road Data, Segment # Longfields Drive 1 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 50 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Longfields Drive 1 (Day)

Road Segment - Angle 1 / Angle 2 : 60 \ 70
Wood depth : 0 metres
No of House Rows : 5, First Row Density of 95 %
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 204.93
Receiver Height : 9.3486
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : 60 \ 67
Barrier Height : 15
Barrier Receiver Distance : 25.7
Source Elevation : 93
Receiver Elevation : 92.3
Barrier Elevation : 92.52
Reference Angle : 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 31

Road Data, Segment # Longfields Drive 2 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Longfields Drive 2 (Day)

Road Segment - Angle 1 / Angle 2	: -67 \ 46
Wood depth	: 0 metres
No of House Rows	: 4, First Row Density of 80 %
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 285.26
Receiver Height	: 9.3486
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -35 \ 32
Barrier Height	: 6
Barrier Receiver Distance	: 70.4
Source Elevation	: 93
Receiver Elevation	: 92.3
Barrier Elevation	: 92
Reference Angle	: 0

Results Segment : Mountshannon Drive 5 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 9.3486	! 4.48	! 96.48
-----	----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
42	67	0.424542		63.96	0	-12.43	-10.41	0	0	0	41.12

Segment Leq : 41.12 dBA

Results Segment : Earl Mulligan Drive (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 9.3486	! 2.8	! 94.8
-----	----------	-------	--------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
58	79	0.424542		65.75	0	-13.95	-11.4	0	0	0	40.4

Segment Leq : 40.4 dBA

Results Segment : Mountshannon Drive 4 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 9.3486	! 6.83	! 98.83
-----	----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
-22	1	0.424542		63.96	0	-14.17	-8.4	0	0	0	41.39
1	11	6.45420000000001E-02		63.96	0	-10.59	-7.23	0	0	-6.51	39.63

Segment Leq : 43.61 dBA

Results Segment : Mountshannon Drive 3 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 9.3486	! 3.76	! 95.76
-----	----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
-53	-7	0.424542		63.96	0	-14.64	-6.12	0	0	0	43.2
-7	0	0.424542		63.96	0	-14.64	-8.8	0	0	0	40.52

Segment Leq : 45.07 dBA

Results Segment : Longfields Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	9.3486	2.88	95.4
-----	--------	------	------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
60	67	0.424542		65.75	0	-16.18	-14.14	0	-14	0	21.43
60	67	0	65.75	0	-11.36	-14.4	0	0	-11.94	28.05	
67	70	0.424542		65.75	0	-16.18	-4.22	0	-14	0	31.35

Segment Leq : 31.77 dBA

Results Segment : Longfields Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	9.3486	4.26	96.26
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
-67	-35	0.424542		65.75	0	-18.22	-8.65	0	-9.5	0	29.38
-35	32	0.424542		65.75	0	-18.22	-4.3	0	-9.5	0	33.73
-35	32	0.424542		65.75	0	-18.22	-4.3	0	0	0	43.23
32	46	0.424542		65.75	0	-18.22	-10.02	0	-9.5	0	28.01

Segment Leq : 35.87 dBA

Total Leq From All DAYTIME Road Segments : 49.26 dBA

Results Segment : Mountshannon Drive 5 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 9.34861	! 4.48	! 96.48
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
42	67	0.4245417		56.36	0	-12.43	-10.41	0	0	0	33.52

Segment Leq : 33.52 dBA

Results Segment : Earl Mulligan Drive (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 9.34861	! 2.8	! 94.8
-----	-----------	-------	--------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
58	79	0.4245417		58.15	0	-13.95	-11.4	0	0	0	32.8

Segment Leq : 32.8 dBA

Results Segment : Mountshannon Drive 4 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	9.34861	6.83	98.83
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-22	1	0.4245417	56.36	0	-14.17	-8.4	0	0	0	33.79
1	11	0.0645417	56.36	0	-10.59	-7.23	0	0	-6.51	32.03

Segment Leq : 36.01 dBA

Results Segment : Mountshannon Drive 3 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	9.34861	3.76	95.76
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-53	-7	0.4245417	56.36	0	-14.64	-6.12	0	0	0	35.6

Segment Leq : 37.47 dBA



Results Segment : Longfields Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 9.34861	! 2.88	! 95.4
-----	-----------	--------	--------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
60	67	0.4245417	58.15	0	-16.18	-14.14	0	-14	0	13.83
60	67	0	58.15	0	-11.36	-14.4	0	0	-11.94	20.45
67	70	0.4245417	58.15	0	-16.18	-4.22	0	-14	0	23.75

Segment Leq : 24.19 dBA

Results Segment : Longfields Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 9.34861	! 4.26	! 96.26
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-67	-35	0.4245417	58.15	0	-18.22	-8.65	0	-9.5	0	21.78
-35	32	0.4245417	58.15	0	-18.22	-4.3	0	-9.5	0	26.13
-35	32	0.4245417	58.15	0	-18.22	-4.3	0	0	0	35.63
32	46	0.4245417	58.15	0	-18.22	-10.02	0	-9.5	0	20.41

Segment Leq : 28.27 dBA

Total Leq From All NIGHTTIME Road Segments : 41.67 dBA

Total Leq - FROM ALL SOURCES : DAY: 49.26 dBA
NIGHT: 41.68 dBA



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 32

Road Data, Segment # Mountshannon Drive 1 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 40 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Mountshannon Drive 1 (Day)

Road Segment - Angle 1 / Angle 2 : -85 \ 81
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 45.32
Receiver Height : 6.8159
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : -85 \ 39
Barrier Height : 10
Barrier Receiver Distance : 12.6
Source Elevation : 92
Receiver Elevation : 92.54
Barrier Elevation : 92.24
Reference Angle : 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 32

Road Data, Segment # Mountshannon Drive 2 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 2 (Day)

Road Segment - Angle 1 / Angle 2	: 11 \ 35
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 277.07
Receiver Height	: 6.8159
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 11 \ 13
Barrier Height	: 10
Barrier Receiver Distance	: 114
Source Elevation	: 92
Receiver Elevation	: 92.54
Barrier Elevation	: 91.9
Reference Angle	: 0

Results Segment : Mountshannon Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	6.8159	2.89	95.13
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-85	39	0	63.96	0	-4.8	-1.8	0	0	-15.19	42.17
39	81	0.500523	63.96	0	-7.21	-7.8	0	0	0	48.95

Segment Leq : 49.78 dBA

Results Segment : Mountshannon Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	6.8159	4.01	95.91
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
11	13	0	63.96	0	-12.66	-15.6	0	0	-7.18	28.52
13	35	0.500523	63.96	0	-19	-9.9	0	0	0	35.06

Segment Leq : 35.93 dBA

Total Leq From All DAYTIME Road Segments : 49.96 dBA

Results Segment : Mountshannon Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	6.81591	2.89	95.13
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-85	39	0	56.36	0	-4.8	-1.8	0	0	-15.19	34.57

Segment Leq : 42.18 dBA

Results Segment : Mountshannon Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	6.81591	4.01	95.91
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
11	13	0	56.36	0	-12.66	-15.6	0	0	-7.18	20.92

Segment Leq : 28.34 dBA

Total Leq From All NIGHTTIME Road Segments : 42.36 dBA

Total Leq - FROM ALL SOURCES : DAY: 49.96 dBA
NIGHT: 42.37 dBA

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 33

Road Data, Segment # Earl Mulligan Drive (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Earl Mulligan Drive (Day)

Road Segment - Angle 1 / Angle 2	: 73 \ 83
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 101.48
Receiver Height	: 6.8159
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 73 \ 83
Barrier Height	: 16
Barrier Receiver Distance	: 10.7
Source Elevation	: 92
Receiver Elevation	: 92.59
Barrier Elevation	: 92.35
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 33

Road Data, Segment # Mountshannon Drive 5 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 5 (Day)

Road Segment - Angle 1 / Angle 2	: 30 \ 53
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 214.46
Receiver Height	: 6.8159
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 30 \ 53
Barrier Height	: 15
Barrier Receiver Distance	: 24.9
Source Elevation	: 92
Receiver Elevation	: 92.59
Barrier Elevation	: 92.6
Reference Angle	: 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 33

Road Data, Segment # Mountshannon Drive 4 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 40 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Mountshannon Drive 4 (Day)

Road Segment - Angle 1 / Angle 2 : -21 \ 0
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 247.61
Receiver Height : 6.8159
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : -21 \ 0
Barrier Height : 16
Barrier Receiver Distance : 91.4
Source Elevation : 92
Receiver Elevation : 92.59
Barrier Elevation : 92.3
Reference Angle : 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 33

Road Data, Segment # Mountshannon Drive 3 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 40 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Mountshannon Drive 3 (Day)

Road Segment - Angle 1 / Angle 2 : -38 \ 0
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 264.9
Receiver Height : 6.8159
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : -38 \ 0
Barrier Height : 16
Barrier Receiver Distance : 56.4
Source Elevation : 92
Receiver Elevation : 92.59
Barrier Elevation : 92.35
Reference Angle : 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 33

Road Data, Segment # Longfields Drive 1 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 50 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Longfields Drive 1 (Day)

Road Segment - Angle 1 / Angle 2 : 45 \ 61
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 269.02
Receiver Height : 6.8159
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : 45 \ 61
Barrier Height : 7
Barrier Receiver Distance : 42.45
Source Elevation : 93
Receiver Elevation : 92.59
Barrier Elevation : 92
Reference Angle : 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 33

Road Data, Segment # Mountshannon Drive 2 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 40 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Mountshannon Drive 2 (Day)

Road Segment - Angle 1 / Angle 2 : 21 \ 33
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 281.43
Receiver Height : 6.8159
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : 21 \ 33
Barrier Height : 16
Barrier Receiver Distance : 31.4
Source Elevation : 92
Receiver Elevation : 92.59
Barrier Elevation : 92.35
Reference Angle : 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 33

Road Data, Segment # Longfields Drive 2 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 50 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Longfields Drive 2 (Day)

Road Segment - Angle 1 / Angle 2 : -67 \ 31
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 326.86
Receiver Height : 6.8159
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : -54 \ 24
Barrier Height : 15
Barrier Receiver Distance : 32.3
Source Elevation : 93
Receiver Elevation : 92.59
Barrier Elevation : 92.65
Reference Angle : 0

Results Segment : Earl Mulligan Drive (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	6.8159	1.77	94.12
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
73	83	0	65.75	0	-8.3	-12.6	0	0	-14.49	30.36

Segment Leq : 30.37 dBA

Results Segment : Mountshannon Drive 5 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	6.8159	1.59	94.19
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
30	53	0	63.96	0	-11.55	-8.96	0	0	-19.16	24.29

Segment Leq : 24.32 dBA

Results Segment : Mountshannon Drive 4 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	6.8159	3.38	95.68
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-21	0	0	63.96	0	-12.18	-9.32	0	0	-18.09	24.37

Segment Leq : 24.4 dBA

Results Segment : Mountshannon Drive 3 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	6.8159	2.41	94.76
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-38	0	0	63.96	0	-12.47	-6.74	0	0	-18.39	26.36

Segment Leq : 26.38 dBA

Results Segment : Longfields Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	6.8159	3.27	95.27
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
45	61	0.080523		65.75	0	-13.55	-8.29	0	0	-5.06 38.85

Segment Leq : 38.85 dBA

Results Segment : Mountshannon Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	6.8159	1.81	94.16
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
21	33	0	63.96	0	-12.73	-11.88	0	0	-18.77	20.58

Segment Leq : 20.66 dBA

Results Segment : Longfields Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 6.8159	! 2.33	! 94.98
-----	----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-67	-54	0.500523	65.75	0	-20.08	-10.6	0	0	0	35.07
-54	24	0	65.75	0	-13.38	-3.5	0	0	-17.75	31.12
24	31	0.500523	65.75	0	-20.08	-9.5	0	0	0	36.17

Segment Leq : 39.37 dBA

Total Leq From All DAYTIME Road Segments : 42.68 dBA

Results Segment : Earl Mulligan Drive (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	6.81591	1.77	94.12
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
73	83	0	58.15	0	-8.3	-12.6	0	0	-14.49	22.76

Segment Leq : 22.81 dBA

Results Segment : Mountshannon Drive 5 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	6.81591	1.59	94.19
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
30	53	0	56.36	0	-11.55	-8.96	0	0	-19.16	16.69

Segment Leq : 16.87 dBA

Results Segment : Mountshannon Drive 4 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	6.81591	3.38	95.68
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-21	0	0	56.36	0	-12.18	-9.32	0	0	-18.09	16.77
-----	---	---	-------	---	--------	-------	---	---	--------	-------

Segment Leq : 16.95 dBA

Results Segment : Mountshannon Drive 3 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	6.81591	2.41	94.76
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-38	0	0	56.36	0	-12.47	-6.74	0	0	-18.39	18.76
-----	---	---	-------	---	--------	-------	---	---	--------	-------

Segment Leq : 18.87 dBA

Results Segment : Longfields Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	6.81591	3.27	95.27
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
45	61	0.0805227	58.15	0	-13.55	-8.29	0	0	0	-5.06 31.25

Segment Leq : 31.26 dBA

Results Segment : Mountshannon Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	6.81591	1.81	94.16
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
21	33	0	56.36	0	-12.73	-11.88	0	0	-18.77	12.98

Segment Leq : 13.4 dBA



Results Segment : Longfields Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

 Source ! Receiver ! Barrier ! Elevation of
 Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)

1.5 ! 6.81591 ! 2.33 ! 94.98

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-67	-54	0.5005227	58.15	0	-20.08	-10.6	0	0	0	27.47
-54	24	0	58.15	0	-13.38	-3.5	0	0	-17.75	23.52

Segment Leq : 31.77 dBA

Total Leq From All NIGHTTIME Road Segments : 35.11 dBA

Total Leq - FROM ALL SOURCES : DAY: 42.69 dBA
 NIGHT: 35.14 dBA

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 34

Road Data, Segment # Mountshannon Drive 1 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 1 (Day)

Road Segment - Angle 1 / Angle 2	: -80 \ 75
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 86.21
Receiver Height	: 6.8159
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -7 \ 70
Barrier Height	: 10
Barrier Receiver Distance	: 69.7
Source Elevation	: 92
Receiver Elevation	: 92.65
Barrier Elevation	: 92.7
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 34

Road Data, Segment # Mountshannon Drive 2 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 2 (Day)

Road Segment - Angle 1 / Angle 2	: 0 \ 19
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 321.98
Receiver Height	: 6.8159
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 0 \ 14
Barrier Height	: 16
Barrier Receiver Distance	: 69.6
Source Elevation	: 92
Receiver Elevation	: 92.65
Barrier Elevation	: 92.35
Reference Angle	: 0

Results Segment : Mountshannon Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	6.8159	5.62	98.32
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-80	-7	0.500523	63.96	0	-11.4	-4.6	0	0	0	47.96
-7	70	0	63.96	0	-7.59	-3.5	0	0	-19	33.87
70	75	0.500523	63.96	0	-11.4	-15.5	0	0	0	37.06

Segment Leq : 48.45 dBA

Results Segment : Mountshannon Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	6.8159	2.44	94.79
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	14	0	63.96	0	-13.32	-11.16	0	0	-17.51	21.97
14	19	0.500523	63.96	0	-19.98	-12.6	0	0	0	31.38

Segment Leq : 31.85 dBA

Total Leq From All DAYTIME Road Segments : 48.55 dBA

Results Segment : Mountshannon Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 6.81591	! 5.62	! 98.32
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-80	-7	0.5005227	56.36	0	-11.4	-4.6	0	0	0	40.36
-7	70	0	56.36	0	-7.59	-3.5	0	0	-19	26.27

Segment Leq : 40.85 dBA

Results Segment : Mountshannon Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 6.81591	! 2.44	! 94.79
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	14	0	56.36	0	-13.32	-11.16	0	0	-17.51	14.37

Segment Leq : 24.27 dBA

Total Leq From All NIGHTTIME Road Segments : 40.95 dBA

Total Leq - FROM ALL SOURCES : DAY: 48.55 dBA
NIGHT: 40.96 dBA

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 35

Road Data, Segment # Earl Mulligan Drive (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Earl Mulligan Drive (Day)

Road Segment - Angle 1 / Angle 2	: 66 \ 80
Wood depth	: 0 metres
No of House Rows	: 2, First Row Density of 50 %
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 141.88
Receiver Height	: 9.3486
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 66 \ 72
Barrier Height	: 16
Barrier Receiver Distance	: 42.4
Source Elevation	: 92
Receiver Elevation	: 92.6
Barrier Elevation	: 92.34
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 35

Road Data, Segment # Mountshannon Drive 5 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 5 (Day)

Road Segment - Angle 1 / Angle 2	: 24 \ 52
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 194.89
Receiver Height	: 9.3486
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 24 \ 52
Barrier Height	: 15
Barrier Receiver Distance	: 14.24
Source Elevation	: 92
Receiver Elevation	: 92.6
Barrier Elevation	: 92.65
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 35

Road Data, Segment # Mountshannon Drive 4 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 4 (Day)

Road Segment - Angle 1 / Angle 2	: -29 \ -7
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 211.5
Receiver Height	: 9.3486
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -29 \ -7
Barrier Height	: 15
Barrier Receiver Distance	: 15.2
Source Elevation	: 92
Receiver Elevation	: 92.6
Barrier Elevation	: 92.65
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 35

Road Data, Segment # Longfields Drive 1 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Longfields Drive 1 (Day)

Road Segment - Angle 1 / Angle 2	: 50 \ 65
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 226.88
Receiver Height	: 9.3486
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 50 \ 65
Barrier Height	: 7
Barrier Receiver Distance	: 31.3
Source Elevation	: 93
Receiver Elevation	: 92.6
Barrier Elevation	: 92
Reference Angle	: 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 35

Road Data, Segment # Mountshannon Drive 3 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 40 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Mountshannon Drive 3 (Day)

Road Segment - Angle 1 / Angle 2 : -45 \ -8
Wood depth : 0 metres
No of House Rows : 1, First Row Density of 20 %
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 239.04
Receiver Height : 9.3486
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : -30 \ -8
Barrier Height : 16
Barrier Receiver Distance : 60.3
Source Elevation : 92
Receiver Elevation : 92.6
Barrier Elevation : 92.3
Reference Angle : 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 35

Road Data, Segment # Longfields Drive 2 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Longfields Drive 2 (Day)

Road Segment - Angle 1 / Angle 2	: -69 \ 36
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 286.46
Receiver Height	: 9.3486
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -69 \ 36
Barrier Height	: 15
Barrier Receiver Distance	: 17.1
Source Elevation	: 93
Receiver Elevation	: 92.6
Barrier Elevation	: 92.65
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 35

Road Data, Segment # Mountshannon Drive 2 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 2 (Day)

Road Segment - Angle 1 / Angle 2	: 20 \ 26
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 304.75
Receiver Height	: 9.3486
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 20 \ 25
Barrier Height	: 16
Barrier Receiver Distance	: 42.1
Source Elevation	: 92
Receiver Elevation	: 92.6
Barrier Elevation	: 92.35
Reference Angle	: 0

Results Segment : Earl Mulligan Drive (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 9.3486	! 3.68	! 96.02
-----	----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
66	72	0.424542		65.75	0	-13.9	-9.37	0	-4	0	38.48
66	72	0	65.75	0	-9.76	-15	0	0	-11.85	29.14	
72	80	0.424542		65.75	0	-13.9	-12.02	0	-4	0	35.83

Segment Leq : 36.67 dBA

Results Segment : Mountshannon Drive 5 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 9.3486	! 1.47	! 94.12
-----	----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
24	52	0	63.96	0	-11.14	-8.12	0	0	-18.28	26.42

Segment Leq : 26.44 dBA

Results Segment : Mountshannon Drive 4 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	9.3486	1.46	94.11
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-29	-7	0	63.96	0	-11.49	-9.14	0	0	-18.99	24.34
-----	----	---	-------	---	--------	-------	---	---	--------	-------

Segment Leq : 24.37 dBA

Results Segment : Longfields Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	9.3486	3.53	95.53
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

50	65	0.424542	65.75	0	-16.81	-12.21	0	0	0	36.73
----	----	----------	-------	---	--------	--------	---	---	---	-------

Segment Leq : 36.73 dBA

Results Segment : Mountshannon Drive 3 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	9.3486	3.33	95.63
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
-45	-30	0.424542		63.96	0	-17.13	-12.22	0	-0.8	0	33.81
-30	-8	0.424542		63.96	0	-17.13	-8.56	0	-0.8	0	37.47
-30	-8	0	63.96	0	-12.02	-9.14	0	0	-16.62	26.18	

Segment Leq : 34.5 dBA

Results Segment : Longfields Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	9.3486	2.29	94.94
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-69	36	0	65.75	0	-12.81	-2.5	0	0	-16.34	34.1

Segment Leq : 34.1 dBA



Results Segment : Mountshannon Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	9.3486	2.32	94.67
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

20	25	0	63.96	0	-13.08	-15.6	0	0	-12.57	22.71
----	----	---	-------	---	--------	-------	---	---	--------	-------

25	26	0.424542	63.96	0	-18.63	-12.76	0	0	0	20 32.57
----	----	----------	-------	---	--------	--------	---	---	---	-------------

Segment Leq : 33 dBA

Total Leq From All DAYTIME Road Segments : 42.42 dBA



Results Segment : Earl Mulligan Drive (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	9.34861	3.68	96.02
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
66	72	0.4245417	58.15	0	-13.9	-9.37	0	-4	0	30.88
66	72	0	58.15	0	-9.76	-15	0	0	-11.85	21.54
72	80	0.4245417	58.15	0	-13.9	-12.02	0	-4	0	28.23

Segment Leq : 29.08 dBA

Results Segment : Mountshannon Drive 5 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	9.34861	1.47	94.12
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
24	52	0	56.36	0	-11.14	-8.12	0	0	-18.28	18.82

Segment Leq : 18.93 dBA

Results Segment : Mountshannon Drive 4 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 9.34861	! 1.46	! 94.11
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-29	-7	0	56.36	0	-11.49	-9.14	0	0	-18.98	16.75
-----	----	---	-------	---	--------	-------	---	---	--------	-------

Segment Leq : 16.93 dBA

Results Segment : Longfields Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 9.34861	! 3.53	! 95.53
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

50	65	0.4245417	58.15	0	-16.81	-12.21	0	0	0	29.13
----	----	-----------	-------	---	--------	--------	---	---	---	-------

Segment Leq : 29.14 dBA

Results Segment : Mountshannon Drive 3 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	9.34861	3.33	95.63
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-45	-30	0.4245417	56.36	0	-17.13	-12.22	0	-0.8	0	26.21
-30	-8	0.4245417	56.36	0	-17.13	-8.56	0	-0.8	0	29.87
-30	-8	0	56.36	0	-12.02	-9.14	0	0	-16.62	18.58

Segment Leq : 26.91 dBA

Results Segment : Longfields Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	9.34861	2.29	94.94
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-69	36	0	58.15	0	-12.81	-2.5	0	0	-16.34	26.5

Segment Leq : 26.52 dBA



Results Segment : Mountshannon Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)

1.5 ! 9.34861 ! 2.32 ! 94.67

Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

20 25 0 56.36 0 -13.08 -15.6 0 0 -12.57 15.11

Segment Leq : 25.41 dBA

Total Leq From All NIGHTTIME Road Segments : 34.86 dBA

Total Leq - FROM ALL SOURCES : DAY: 42.43 dBA
NIGHT: 34.9 dBA

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 36

Road Data, Segment # Earl Mulligan Drive (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Earl Mulligan Drive (Day)

Road Segment - Angle 1 / Angle 2	: 61 \ 79
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 156.06
Receiver Height	: 6.8159
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 61 \ 79
Barrier Height	: 16
Barrier Receiver Distance	: 9.8
Source Elevation	: 92
Receiver Elevation	: 92.65
Barrier Elevation	: 92.3
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 36

Road Data, Segment # Mountshannon Drive 5 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 5 (Day)

Road Segment - Angle 1 / Angle 2	: 26 \ 56
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 161.59
Receiver Height	: 6.8159
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 26 \ 56
Barrier Height	: 6
Barrier Receiver Distance	: 62
Source Elevation	: 92
Receiver Elevation	: 92.65
Barrier Elevation	: 92
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 36

Road Data, Segment # Mountshannon Drive 4 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 4 (Day)

Road Segment - Angle 1 / Angle 2	: -31 \ 0
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 178.87
Receiver Height	: 6.8159
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -14 \ 0
Barrier Height	: 6
Barrier Receiver Distance	: 81.4
Source Elevation	: 92
Receiver Elevation	: 92.65
Barrier Elevation	: 92
Reference Angle	: 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 36

Road Data, Segment # Mountshannon Drive 3 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 40 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Mountshannon Drive 3 (Day)

Road Segment - Angle 1 / Angle 2 : -50 \ -9
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 204.84
Receiver Height : 6.8159
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : -50 \ -18
Barrier Height : 16
Barrier Receiver Distance : 27.6
Source Elevation : 92
Receiver Elevation : 92.65
Barrier Elevation : 92.3
Reference Angle : 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 36

Road Data, Segment # Longfields Drive 1 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Longfields Drive 1 (Day)

Road Segment - Angle 1 / Angle 2	: 55 \ 68
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 205.46
Receiver Height	: 6.8159
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 55 \ 68
Barrier Height	: 7
Barrier Receiver Distance	: 37.1
Source Elevation	: 93
Receiver Elevation	: 92.65
Barrier Elevation	: 92
Reference Angle	: 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 36

Road Data, Segment # Longfields Drive 2 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 50 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Longfields Drive 2 (Day)

Road Segment - Angle 1 / Angle 2 : -70 \ 41
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 272.29
Receiver Height : 6.8159
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : -36 \ 30
Barrier Height : 15
Barrier Receiver Distance : 30.3
Source Elevation : 93
Receiver Elevation : 92.65
Barrier Elevation : 92.52
Reference Angle : 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 36

Road Data, Segment # Mountshannon Drive 2 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 40 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Mountshannon Drive 2 (Day)

Road Segment - Angle 1 / Angle 2 : 18 \ 21
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 295.71
Receiver Height : 6.8159
Topography : 1 (Flat Slope; No Barrier)
Source Elevation : 92
Receiver Elevation : 92.65
Reference Angle : 0

Results Segment : Earl Mulligan Drive (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	6.8159	1.57	93.87
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

61	79	0	65.75	0	-10.17	-10.02	0	0	-16.34	29.22
----	----	---	-------	---	--------	--------	---	---	--------	-------

Segment Leq : 29.23 dBA

Results Segment : Mountshannon Drive 5 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	6.8159	3.79	95.79
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

26	56	0.140523	63.96	0	-11.77	-8.06	0	0	-5.29	38.84
----	----	----------	-------	---	--------	-------	---	---	-------	-------

Segment Leq : 38.84 dBA

Results Segment : Mountshannon Drive 4 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	6.8159	4.21	96.21
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-31	-14	0.500523	63.96	0	-16.15	-10.5	0	0	0	37.31
-14	0	0.140523	63.96	0	-12.28	-11.4	0	0	-6.17	34.11

Segment Leq : 39.01 dBA

Results Segment : Mountshannon Drive 3 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	6.8159	2	94.3
-----	--------	---	------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-50	-18	0	63.96	0	-11.35	-7.52	0	0	-19.58	25.51
-18	-9	0.500523	63.96	0	-17.04	-10.5	0	0	0	36.42

Segment Leq : 36.76 dBA

Results Segment : Longfields Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
-------------------	-----------------------	----------------------	--------------------------------

1.5	! 6.8159	! 3.4	! 95.4
-----	----------	-------	--------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
55	68	0.080523		65.75	0	-12.28	-8.21	0	0	-5.1 40.16

Segment Leq : 40.16 dBA

Results Segment : Longfields Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
-------------------	-----------------------	----------------------	--------------------------------

1.5	! 6.8159	! 2.53	! 95.05
-----	----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-70	-36	0.500523		65.75	0	-18.89	-8	0	0	0 38.86
-36	30	0	65.75	0	-12.59	-4.1	0	0	-18.93	30.13
30	41	0.500523		65.75	0	-18.89	-12.7	0	0	0 34.16

Segment Leq : 40.54 dBA



Results Segment : Mountshannon Drive 2 (Day)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
18	21	0.500523	63.96	0	-19.43	-7.3	0	0	0	37.23

Segment Leq : 37.23 dBA

Total Leq From All DAYTIME Road Segments : 46.83 dBA

Results Segment : Earl Mulligan Drive (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	6.81591	1.57	93.87
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

61	79	0	58.15	0	-10.17	-10.02	0	0	-16.34	21.62
----	----	---	-------	---	--------	--------	---	---	--------	-------

Segment Leq : 21.68 dBA

Results Segment : Mountshannon Drive 5 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	6.81591	3.79	95.79
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

26	56	0.1405227	56.36	0	-11.77	-8.06	0	0	-5.29	31.24
----	----	-----------	-------	---	--------	-------	---	---	-------	-------

Segment Leq : 31.25 dBA

Results Segment : Mountshannon Drive 4 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	6.81591	4.21	96.21
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-31	-14	0.5005227	56.36	0	-16.15	-10.5	0	0	0	29.71
-14	0	0.1405227	56.36	0	-12.28	-11.4	0	0	-6.17	26.51

Segment Leq : 31.41 dBA

Results Segment : Mountshannon Drive 3 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	6.81591	2	94.3
-----	---------	---	------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-50	-18	0	56.36	0	-11.35	-7.52	0	0	-19.58	17.91

Segment Leq : 29.16 dBA



Results Segment : Longfields Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
-------------------	-----------------------	----------------------	--------------------------------

1.5	! 6.81591	! 3.4	! 95.4
-----	-----------	-------	--------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
55	68	0.0805227	58.15	0	-12.28	-8.21	0	0	0	-5.1 32.56

Segment Leq : 32.56 dBA

Results Segment : Longfields Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
-------------------	-----------------------	----------------------	--------------------------------

1.5	! 6.81591	! 2.53	! 95.05
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-70	-36	0.5005227	58.15	0	-18.89	-8	0	0	0	0 31.26
-36	30	0	58.15	0	-12.59	-4.1	0	0	-18.93	22.53

Segment Leq : 32.94 dBA



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 37

Road Data, Segment # Mountshannon Drive 5 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 40 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Mountshannon Drive 5 (Day)

Road Segment - Angle 1 / Angle 2 : 19 \ 57
Wood depth : 0 metres
No of House Rows : 3, First Row Density of 95 %
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 136.84
Receiver Height : 6.8159
Topography : 1 (Flat Slope; No Barrier)
Source Elevation : 92
Receiver Elevation : 92.52
Reference Angle : 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 37

Road Data, Segment # Mountshannon Drive 4 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 4 (Day)

Road Segment - Angle 1 / Angle 2	: -40 \ -12
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 141.21
Receiver Height	: 6.8159
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -40 \ -12
Barrier Height	: 6
Barrier Receiver Distance	: 37.6
Source Elevation	: 92
Receiver Elevation	: 92.52
Barrier Elevation	: 92
Reference Angle	: 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 37

Road Data, Segment # Longfields Drive 1 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Longfields Drive 1 (Day)

Road Segment - Angle 1 / Angle 2	: 61 \ 72
Wood depth	: 0 metres
No of House Rows	: 5, First Row Density of 20 %
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 166.13
Receiver Height	: 6.8159
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 61 \ 65
Barrier Height	: 6
Barrier Receiver Distance	: 32.2
Source Elevation	: 93
Receiver Elevation	: 92.52
Barrier Elevation	: 92
Reference Angle	: 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 37

Road Data, Segment # Mountshannon Drive 3 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 40 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Mountshannon Drive 3 (Day)

Road Segment - Angle 1 / Angle 2 : -57 \ -19
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 174.86
Receiver Height : 6.8159
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : -57 \ -29
Barrier Height : 4.7
Barrier Receiver Distance : 138.7
Source Elevation : 92
Receiver Elevation : 92.52
Barrier Elevation : 92
Reference Angle : 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 37

Road Data, Segment # Earl Mulligan Drive (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 50 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Earl Mulligan Drive (Day)

Road Segment - Angle 1 / Angle 2	: 59 \ 76
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 192
Receiver Height	: 6.8159
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: 59 \ 76
Barrier Height	: 4.7
Barrier Receiver Distance	: 57.3
Source Elevation	: 92
Receiver Elevation	: 92.52
Barrier Elevation	: 92
Reference Angle	: 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 37

Road Data, Segment # Longfields Drive 2 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 50 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Longfields Drive 2 (Day)

Road Segment - Angle 1 / Angle 2 : -72 \ 10
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 236.36
Receiver Height : 6.8159
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : -72 \ 10
Barrier Height : 6
Barrier Receiver Distance : 88.6
Source Elevation : 93
Receiver Elevation : 92.52
Barrier Elevation : 92
Reference Angle : 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 37

Road Data, Segment # Longfields Drive 2 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 50 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Longfields Drive 2 (Day)

Road Segment - Angle 1 / Angle 2 : 10 \ 47
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 236.36
Receiver Height : 6.8159
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : 17 \ 47
Barrier Height : 6
Barrier Receiver Distance : 193.5
Source Elevation : 93
Receiver Elevation : 92.52
Barrier Elevation : 92
Reference Angle : 0



Results Segment : Mountshannon Drive 5 (Day)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
19	57	0.500523		63.96	0	-14.41	-7.3	0	-11.2	0	31.05

Segment Leq : 31.06 dBA

Results Segment : Mountshannon Drive 4 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
1.5	! 6.8159	! 3.05	! 95.05

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
-40	-12	0.140523		63.96	0	-11.11	-8.02	0	0	-5.03	39.8

Segment Leq : 39.8 dBA

Results Segment : Longfields Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
1.5	! 6.8159	! 3.44	! 95.44

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
61	65	0.500523		65.75	0	-15.67	-14.4	0	-7	0	28.68
61	65	0.500523		65.75	0	-15.67	-14.4	0	0	0	35.68
65	72	0.500523		65.75	0	-15.67	-10.1	0	-7	0	32.98

Segment Leq : 34.35 dBA

Results Segment : Mountshannon Drive 3 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	6.8159	6.13	98.13
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-57	-29	0.218523		63.96	0	-13	-8.28	0	0	-7.11 35.57
-29	-19	0.500523		63.96	0	-16	-11.4	0	0	0 36.56

Segment Leq : 39.1 dBA

Results Segment : Earl Mulligan Drive (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	6.8159	3.24	95.24
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
59	76	0.500523		65.75	0	-16.61	-12.5	0	0	0 36.64

Segment Leq : 36.64 dBA

Results Segment : Longfields Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 6.8159	! 4.31	! 96.31
-----	----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
-72	10	0.140523		65.75	0	-13.66	-3.56	0	0	-5.07	43.46

Segment Leq : 43.46 dBA

Results Segment : Longfields Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 6.8159	! 6.46	! 98.46
-----	----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
10	17	0.500523		65.75	0	-17.97	-12.6	0	0	0	35.18
17	47	0.140523		65.75	0	-13.66	-8.02	0	0	-7.94	36.13

Segment Leq : 38.69 dBA

Total Leq From All DAYTIME Road Segments : 47.47 dBA



Results Segment : Mountshannon Drive 5 (Night)

Source Height : 1.5 m

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
19	57	0.5005227	56.36	0	-14.41	-7.3	0	-11.2	0	23.45

Segment Leq : 23.49 dBA

Results Segment : Mountshannon Drive 4 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
1.5	! 6.81591	! 3.05	! 95.05

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-40	-12	0.1405227	56.36	0	-11.11	-8.02	0	0	0	-5.03 32.2

Segment Leq : 32.21 dBA

Results Segment : Longfields Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
1.5	! 6.81591	! 3.44	! 95.44

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
61	65	0.5005227	58.15	0	-15.67	-14.4	0	-7	0	21.08
61	65	0.5005227	58.15	0	-15.67	-14.4	0	0	0	28.08
65	72	0.5005227	58.15	0	-15.67	-10.1	0	-7	0	25.38

Segment Leq : 26.76 dBA

Results Segment : Mountshannon Drive 3 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 6.81591	! 6.13	! 98.13
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-57	-29	0.2185227		56.36	0	-13	-8.28	0	0	-7.11 27.97

Segment Leq : 31.51 dBA

Results Segment : Earl Mulligan Drive (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 6.81591	! 3.24	! 95.24
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
59	76	0.5005227		58.15	0	-16.61	-12.5	0	0	0 29.04

Segment Leq : 29.05 dBA



Results Segment : Longfields Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.5	6.81591	4.31	96.31

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-72	10	0.1405227	58.15	0	-13.66	-3.56	0	0	0	35.86

Segment Leq : 35.86 dBA

Results Segment : Longfields Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.5	6.81591	6.46	98.46

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
10	17	0.5005227	58.15	0	-17.97	-12.6	0	0	0	27.58
17	47	0.1405227	58.15	0	-13.66	-8.02	0	0	0	28.53

Segment Leq : 31.09 dBA

Total Leq From All NIGHTTIME Road Segments : 39.88 dBA

Total Leq - FROM ALL SOURCES : DAY: 47.47 dBA
 NIGHT: 39.89 dBA

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 38

Road Data, Segment # Mountshannon Drive 1 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 1 (Day)

Road Segment - Angle 1 / Angle 2	: -84 \ -25
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 53.26
Receiver Height	: 6.8159
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -84 \ -25
Barrier Height	: 7
Barrier Receiver Distance	: 35.2663
Source Elevation	: 92
Receiver Elevation	: 92.59
Barrier Elevation	: 92
Reference Angle	: 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 38

Road Data, Segment # Longfields Drive 1 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 50 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Longfields Drive 1 (Day)

Road Segment - Angle 1 / Angle 2 : 41 \ 59
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 263.16
Receiver Height : 6.8159
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : 41 \ 59
Barrier Height : 7
Barrier Receiver Distance : 13.9
Source Elevation : 93
Receiver Elevation : 92.59
Barrier Elevation : 92
Reference Angle : 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 38

Road Data, Segment # Longfields Drive 2 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 50 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Longfields Drive 2 (Day)

Road Segment - Angle 1 / Angle 2 : -31 \ 27
Wood depth : 0 metres
No of House Rows : 3, First Row Density of 90 %
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 311.67
Receiver Height : 6.8159
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : -24 \ 27
Barrier Height : 7
Barrier Receiver Distance : 30.8984
Source Elevation : 93
Receiver Elevation : 92.59
Barrier Elevation : 92
Reference Angle : 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 38

Road Data, Segment # Mountshannon Drive 1 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 40 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Mountshannon Drive 1 (Day)

Road Segment - Angle 1 / Angle 2 : -25 \ 0
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 53.26
Receiver Height : 6.8159
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : -25 \ 0
Barrier Height : 10
Barrier Receiver Distance : 20.2132
Source Elevation : 92
Receiver Elevation : 92.59
Barrier Elevation : 92.75
Reference Angle : 0

Results Segment : Mountshannon Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
-------------------	-----------------------	----------------------	--------------------------------

1.5	! 6.8159	! 5.41	! 97.41
-----	----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-84	-25	0.080523		63.96	0	-5.95	-4.19	0	0	-10.88 42.94

Segment Leq : 42.94 dBA

Results Segment : Longfields Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
-------------------	-----------------------	----------------------	--------------------------------

1.5	! 6.8159	! 2.76	! 94.76
-----	----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
41	59	0.500523		65.75	0	-18.67	-11.6	0	0	0 35.48

Segment Leq : 35.48 dBA

Results Segment : Longfields Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 6.8159	! 2.99	! 94.99
-----	----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
-31	-24	0.500523		65.75	0	-19.77	-8.8	0	-9.4	0	27.78
-24	27	0.500523		65.75	0	-19.77	-5.6	0	-9.4	0	30.98
-24	27	0.080523		65.75	0	-14.24	-4.51	0	0	-5	42

Segment Leq : 32.68 dBA

Results Segment : Mountshannon Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 6.8159	! 2.99	! 95.74
-----	----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-25	0	0	63.96	0	-5.5	-8.6	0	0	-18.54	31.32

Segment Leq : 31.33 dBA

Total Leq From All DAYTIME Road Segments : 44.22 dBA

Results Segment : Mountshannon Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 6.81591	! 5.41	! 97.41
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-84	-25	0.0805227		56.36	0	-5.95	-4.19	0	0	-10.88 35.34

Segment Leq : 35.34 dBA

Results Segment : Longfields Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 6.81591	! 2.76	! 94.76
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
41	59	0.5005227		58.15	0	-18.67	-11.6	0	0	0 27.88

Segment Leq : 27.89 dBA

Results Segment : Longfields Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 6.81591	! 2.99	! 94.99
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-31	-24	0.5005227	58.15	0	-19.77	-8.8	0	-9.4	0	20.18
-24	27	0.5005227	58.15	0	-19.77	-5.6	0	-9.4	0	23.38
-24	27	0.0805227	58.15	0	-14.24	-4.51	0	0	-5	34.4

Segment Leq : 25.09 dBA

Results Segment : Mountshannon Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
-------------------	-------------------------	------------------------	----------------------------------

1.5	! 6.81591	! 2.99	! 95.74
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-25	0	0	56.36	0	-5.5	-8.6	0	0	-18.54	23.72

Segment Leq : 23.76 dBA

Total Leq From All NIGHTTIME Road Segments : 36.64 dBA

Total Leq - FROM ALL SOURCES : DAY: 44.22 dBA
NIGHT: 36.66 dBA



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 39

Road Data, Segment # Longfields Drive 1 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 50 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Longfields Drive 1 (Day)

Road Segment - Angle 1 / Angle 2 : 58 \ 71
Wood depth : 0 metres
No of House Rows : 0
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 160.08
Receiver Height : 6.8159
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : 58 \ 71
Barrier Height : 7
Barrier Receiver Distance : 8.07
Source Elevation : 93
Receiver Elevation : 92.77
Barrier Elevation : 92
Reference Angle : 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 39

Road Data, Segment # Mountshannon Drive 1 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 1 (Day)

Road Segment - Angle 1 / Angle 2	: -72 \ -7
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 160.85
Receiver Height	: 6.8159
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -72 \ -7
Barrier Height	: 7
Barrier Receiver Distance	: 139.64
Source Elevation	: 92
Receiver Elevation	: 92.77
Barrier Elevation	: 92
Reference Angle	: 0



Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 39

Road Data, Segment # Longfields Drive 2 (Day)

Car Traffic Volume : 6477 / 563 Day / Night
Medium Truck Volume : 515 / 45 Day / Night
Heavy Truck Volume : 368 / 32 Day / Night
Posted Speed Limit : 50 km/h
Road Gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete - as HL-1)

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

24 hr Traffic Volume (AADT or SADT) : 8000
Percentage of Annual Growth : 0 %
Number of Years of Growth : 0
Medium Truck % of Total Volume : 7 %
Heavy Truck % of Total Volume : 5 %
Day (16 hrs) % of Total Volume : 92 %

Data for Segment # : Longfields Drive 2 (Day)

Road Segment - Angle 1 / Angle 2 : -31 \ 44
Wood depth : 0 metres
No of House Rows : 3, First Row Density of 50 %
Surface : 1 (Absorptive ground surface)
Receiver Source Distance : 219.36
Receiver Height : 6.8159
Topography : 7 (Flat Slope; With Barrier)
Barrier Angle : -5 \ 29
Barrier Height : 7
Barrier Receiver Distance : 42.596
Source Elevation : 93
Receiver Elevation : 92.77
Barrier Elevation : 92
Reference Angle : 0

Ontario Road Noise Analysis Method for Environment and Transportation

Program Written by Jeremy Charbonneau

Filename : GME11-033 - 146 Mountshannon.docx

Description :

Receptor # 39

Road Data, Segment # Mountshannon Drive 1 (Day)

Car Traffic Volume	: 6477 / 563	Day / Night
Medium Truck Volume	: 515 / 45	Day / Night
Heavy Truck Volume	: 368 / 32	Day / Night
Posted Speed Limit	: 40 km/h	
Road Gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete - as HL-1)	

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

24 hr Traffic Volume (AADT or SADT)	: 8000
Percentage of Annual Growth	: 0 %
Number of Years of Growth	: 0
Medium Truck % of Total Volume	: 7 %
Heavy Truck % of Total Volume	: 5 %
Day (16 hrs) % of Total Volume	: 92 %

Data for Segment # : Mountshannon Drive 1 (Day)

Road Segment - Angle 1 / Angle 2	: -7 \ 0
Wood depth	: 0 metres
No of House Rows	: 0
Surface	: 1 (Absorptive ground surface)
Receiver Source Distance	: 160.85
Receiver Height	: 6.8159
Topography	: 7 (Flat Slope; With Barrier)
Barrier Angle	: -7 \ -2
Barrier Height	: 10
Barrier Receiver Distance	: 127.88
Source Elevation	: 92
Receiver Elevation	: 92.77
Barrier Elevation	: 92.75
Reference Angle	: 0

Results Segment : Longfields Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 6.8159	! 2.76	! 94.76
-----	----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
58	71	0.500523		65.75	0	-15.43	-12.6	0	0	0	37.72

Segment Leq : 37.72 dBA

Results Segment : Mountshannon Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 6.8159	! 6.78	! 98.78
-----	----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
-72	-7	0.080523		63.96	0	-11.13	-3.54	0	0	-13.4	35.89

Segment Leq : 35.89 dBA

Results Segment : Longfields Drive 2 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	6.8159	3.49	95.49
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-31	-5	0.500523	65.75	0	-17.48	-8.5	0	-5.5	0	34.27
-5	29	0.500523	65.75	0	-17.48	-7.6	0	-5.5	0	35.17
-5	29	0.080523	65.75	0	-12.59	-6.04	0	0	-5.08	42.04
29	44	0.500523	65.75	0	-17.48	-11.1	0	-5.5	0	31.67

Segment Leq : 38.71 dBA

Results Segment : Mountshannon Drive 1 (Day)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	6.8159	5.59	98.34
-----	--------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-7	-2	0	63.96	0	-10.3	-15.6	0	0	-15.48	22.58
-2	0	0.500523	63.96	0	-15.46	-2.5	0	0	0	46

Segment Leq : 46.02 dBA

Total Leq From All DAYTIME Road Segments : 47.58 dBA

Results Segment : Longfields Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 6.81591	! 2.76	! 94.76
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	
58	71	0.5005227		58.15	0	-15.43	-12.6	0	0	0	30.12

Segment Leq : 30.13 dBA

Results Segment : Mountshannon Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source	! Receiver	! Barrier	! Elevation of
Height (m)	! Height (m)	! Height (m)	! Barrier Top (m)

1.5	! 6.81591	! 6.78	! 98.78
-----	-----------	--------	---------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq	
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	
-72	-7	0.0805227		56.36	0	-11.13	-3.54	0	0	-13.4	28.29

Segment Leq : 28.3 dBA



Results Segment : Longfields Drive 2 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	6.81591	3.49	95.49
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-31	-5	0.5005227	58.15	0	-17.48	-8.5	0	-5.5	0	26.67
-5	29	0.5005227	58.15	0	-17.48	-7.6	0	-5.5	0	27.57
-5	29	0.0805227	58.15	0	-12.59	-6.04	0	0	-5.08	34.44
29	44	0.5005227	58.15	0	-17.48	-11.1	0	-5.5	0	24.07

Segment Leq : 31.11 dBA

Results Segment : Mountshannon Drive 1 (Night)

Source Height : 1.5 m

Barrier Height for Grazing Incidence :

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
-------------------	---------------------	--------------------	------------------------------

1.5	6.81591	5.59	98.34
-----	---------	------	-------

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-7	-2	0	56.36	0	-10.3	-15.6	0	0	-15.48	14.98

Segment Leq : 38.42 dBA

Total Leq From All NIGHTTIME Road Segments : 39.99 dBA

Total Leq - FROM ALL SOURCES : DAY: 47.58 dBA
NIGHT: 40 dBA

APPENDIX C

RAILWAY NOISE MODELLING RESULTS
STAMSON INPUT & OUTPUT DATA

TABLE C1 – DAYTIME SUMMATION OF ON-ROAD AND RAILWAY NOISE (WITH WHISTLE)

RECEPTOR	ROAD LEQ	TRAIN LEQ	TOTAL LEQ
1	62	46	63
2	52	38	53
3	52	32	52
4	48	40	48
5	62	35	62
6	46	32	46
7	41	36	42
8	39	0	39
9	39	0	39
10	45	0	45
11	50	40	50
12	39	0	39
13	48	39	48
14	39	0	39
15	44	0	44
16	44	0	44
17	42	32	42
18	46	36	47
19	45	34	45
20	41	33	42
21	44	0	44
22	43	33	43
23	44	32	44
24	52	42	52
25	49	37	49
26	54	36	54
27	51	45	52
28	45	48	50
29	41	0	41
30	43	0	43
31	49	0	49
32	50	43	51
33	43	0	43
34	49	41	49
35	42	0	42
36	47	0	47
37	47	0	47
38	44	40	46
39	48	40	48

TABLE C2 – NIGHTIME SUMMATION OF ON-ROAD AND RAILWAY NOISE (WITH WHISTLE)

RECEPTOR	ROAD LEQ	TRAIN LEQ	TOTAL LEQ
1	55	41	55
2	46	34	46
3	44	27	45
4	40	35	41
5	54	31	54
6	40	29	40
7	33	32	36
8	32	0	32
9	32	0	32
10	38	0	38
11	42	35	43
12	32	0	32
13	40	34	41
14	32	0	32
15	37	0	37
16	37	0	37
17	34	27	35
18	39	31	40
19	37	29	38
20	34	28	35
21	37	0	37
22	35	29	36
23	36	28	37
24	44	37	45
25	41	38	43
26	46	31	46
27	43	41	45
28	38	44	45
29	34	0	34
30	35	0	35
31	42	0	42
32	42	39	44
33	35	0	35
34	41	36	42
35	35	0	35
36	39	0	39
37	40	0	40
38	37	35	39
39	40	36	42



STAMSON 5.0 NORMAL REPORT Date: 27-05-2011 16:41:35
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec01.te Time Period: Day/Night 16/8 hours
Description: GME11-033 - VIA RAIL WHISTLE - REC01

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

Train !Cont Type !weld	! Trains ! !(Left)	! Trains ! !(Right)	! Speed ! !(km/h)	!# loc ! !/Train!	!# Cars ! !/Train!	! Eng ! ! type
1. PASSANGER	6.0/1.0	6.0/1.0	150.0	1.0	4.0	Diesel!

Data for Segment # 1: VIA (day/night)

Angle1 Angle2 : -61.00 deg 66.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 353.00 / 353.00 m
Receiver height : 4.50 / 4.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Whistle Angle : 37 deg Track 1
Barrier angle1 : -61.00 deg Angle2 : 66.00 deg
Barrier height : 7.00 m
Barrier receiver distance : 269.00 / 269.00 m
Source elevation : 92.00 m
Receiver elevation : 92.76 m
Barrier elevation : 92.00 m
Reference angle : 0.00



Results segment # 1: VIA (day)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	4.50	4.30	96.30
0.50	4.50	1.63	93.63

LOCOMOTIVE (0.00 + 43.37 + 0.00) = 43.37 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-61	66	0.08	66.73	-14.75	-1.59	0.00	0.00	-7.02	43.37

WHEEL (0.00 + 31.39 + 0.00) = 31.39 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-61	66	0.18	59.81	-16.19	-1.70	0.00	0.00	-10.53	31.39

LEFT WHISTLE (0.00 + 40.64 + 0.00) = 40.64 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-21	37	0.08	67.68	-14.75	-4.95	0.00	0.00	-7.34	40.64

RIGHT WHISTLE (0.00 + 37.55 + 0.00) = 37.55 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
37	62	0.08	67.68	-14.75	-8.71	0.00	0.00	-6.68	37.55

Segment Leq : 46.06 dBA

Total Leq All Segments: 46.06 dBA



Results segment # 1: VIA (night)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	4.50	4.30	96.30
0.50	4.50	1.63	93.63

LOCOMOTIVE (0.00 + 38.60 + 0.00) = 38.60 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-61	66	0.08	61.96	-14.75	-1.59	0.00	0.00	-7.02	38.60

WHEEL (0.00 + 26.62 + 0.00) = 26.62 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-61	66	0.18	55.04	-16.19	-1.70	0.00	0.00	-10.53	26.62

LEFT WHISTLE (0.00 + 35.87 + 0.00) = 35.87 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-21	37	0.08	62.91	-14.75	-4.95	0.00	0.00	-7.34	35.87

RIGHT WHISTLE (0.00 + 32.78 + 0.00) = 32.78 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
37	62	0.08	62.91	-14.75	-8.71	0.00	0.00	-6.68	32.78

Segment Leq : 41.29 dBA

Total Leq All Segments: 41.29 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 46.06
(NIGHT): 41.29



STAMSON 5.0 NORMAL REPORT Date: 27-05-2011 16:43:19
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec02.te Time Period: Day/Night 16/8 hours
Description: GME11-033 - VIA RAIL WHISTLE - REC02

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

Train !Cont Type !weld	! Trains ! !(Left)	! Trains ! !(Right)	! Speed ! !(km/h)	!# loc ! !/Train!	!# Cars ! !/Train!	! Eng ! ! type
1. PASSANGER	6.0/1.0	6.0/1.0	150.0	1.0	4.0	Diesel!

Data for Segment # 1: VIA (day/night)

Angle1 Angle2 : -59.00 deg 65.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 372.30 / 372.30 m
Receiver height : 1.50 / 4.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Whistle Angle : 37 deg Track 1
Barrier angle1 : -59.00 deg Angle2 : 47.00 deg
Barrier height : 10.00 m
Barrier receiver distance : 3.00 / 3.00 m
Source elevation : 92.00 m
Receiver elevation : 91.90 m
Barrier elevation : 91.90 m
Reference angle : 0.00



Results segment # 1: VIA (day)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	1.50	1.52	93.42
0.50	1.50	1.49	93.39

LOCOMOTIVE (0.00 + 30.48 + 33.13) = 35.01 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-59	47	0.00	66.73	-13.95	-2.30	0.00	0.00	-20.00	30.48
47	65	0.58	66.73	-22.11	-11.50	0.00	0.00	0.00	33.13

WHEEL (0.00 + 22.24 + 24.97) = 26.82 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-59	47	0.09	59.81	-15.20	-2.36	0.00	0.00	-20.00	22.24
47	65	0.66	59.81	-23.15	-11.69	0.00	0.00	0.00	24.97

LEFT WHISTLE (0.00 + 28.57 + 0.00) = 28.57 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-18	37	0.00	67.68	-13.95	-5.17	0.00	0.00	-20.00	28.57

RIGHT WHISTLE (0.00 + 21.18 + 33.21) = 33.47 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
37	47	0.00	67.68	-13.95	-12.55	0.00	0.00	-20.00	21.18
47	61	0.58	67.68	-22.11	-12.37	0.00	0.00	0.00	33.21

Segment Leq : 38.19 dBA

Total Leq All Segments: 38.19 dBA



Results segment # 1: VIA (night)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	4.50	4.50	96.40
0.50	4.50	4.47	96.37

LOCOMOTIVE (0.00 + 25.71 + 29.84) = 31.26 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-59	47	0.00	61.96	-13.95	-2.30	0.00	0.00	-20.00	25.71
47	65	0.50	61.96	-20.85	-11.27	0.00	0.00	0.00	29.84

WHEEL (0.00 + 18.79 + 21.18) = 23.16 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-59	47	0.00	55.04	-13.95	-2.30	0.00	0.00	-20.00	18.79
47	65	0.60	55.04	-22.32	-11.53	0.00	0.00	0.00	21.18

LEFT WHISTLE (0.00 + 23.80 + 0.00) = 23.80 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-18	37	0.00	62.91	-13.95	-5.17	0.00	0.00	-20.00	23.80

RIGHT WHISTLE (0.00 + 16.41 + 29.90) = 30.09 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
37	47	0.00	62.91	-13.95	-12.55	0.00	0.00	-20.00	16.41
47	61	0.50	62.91	-20.85	-12.16	0.00	0.00	0.00	29.90

Segment Leq : 34.48 dBA

Total Leq All Segments: 34.48 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 38.19
(NIGHT): 34.48



STAMSON 5.0 NORMAL REPORT Date: 27-05-2011 16:43:54
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec03.te Time Period: Day/Night 16/8 hours
Description: GME11-033 - VIA RAIL WHISTLE - REC03

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

Train !Cont Type !weld	! Trains ! !(Left)	! Trains ! !(Right)	! Speed ! !(km/h)	!# loc ! !/Train!	!# Cars ! !/Train!	! Eng ! ! type
1. PASSANGER	6.0/1.0	6.0/1.0	150.0	1.0	4.0	!Diesel!

No

Data for Segment # 1: VIA (day/night)

Angle1 Angle2 : 1.00 deg 64.00 deg
Wood depth : 0 (No woods.)
No of house rows : 3 / 3
House density : 95 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 392.00 / 392.00 m
Receiver height : 1.50 / 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Whistle Angle : 37 deg Track 1
Barrier angle1 : 1.00 deg Angle2 : 23.00 deg
Barrier height : 10.00 m
Barrier receiver distance : 23.00 / 23.00 m
Source elevation : 92.00 m
Receiver elevation : 92.30 m
Barrier elevation : 91.90 m
Reference angle : 0.00



Results segment # 1: VIA (day)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	1.50	2.03	93.93
0.50	1.50	1.82	93.72

LOCOMOTIVE (0.00 + 24.39 + 26.72) = 28.72 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
1	23	0.58	66.73	-22.46	-9.20	0.00	-10.23	0.00	24.84
1	23	0.00	66.73	-14.17	-9.13	0.00	0.00	-19.04	24.39
23	64	0.58	66.73	-22.46	-7.32	0.00	-10.23	0.00	26.72

WHEEL (0.00 + 15.95 + 18.62) = 20.50 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
1	23	0.66	59.81	-23.53	-9.21	0.00	-10.23	0.00	16.84
1	23	0.09	59.81	-15.45	-9.14	0.00	0.00	-19.27	15.95
23	64	0.66	59.81	-23.53	-7.43	0.00	-10.23	0.00	18.62

LEFT WHISTLE (0.00 + 25.34 + 23.52) = 27.54 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
1	23	0.58	67.68	-22.46	-9.20	0.00	-10.23	0.00	25.79
1	23	0.00	67.68	0.00	-9.13	0.00	0.00	-19.04	25.34
23	37	0.58	67.68	-22.46	-11.46	0.00	-10.23	0.00	23.52

RIGHT WHISTLE (0.00 + 25.08 + 0.00) = 25.08 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
37	61	0.58	67.68	-22.46	-9.91	0.00	-10.23	0.00	25.08

Segment Leq : 32.42 dBA

Total Leq All Segments: 32.42 dBA



Results segment # 1: VIA (night)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	1.50	2.03	93.93
0.50	1.50	1.82	93.72

LOCOMOTIVE (0.00 + 19.61 + 21.95) = 23.95 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
1	23	0.58	61.96	-22.46	-9.20	0.00	-10.23	0.00	20.07
1	23	0.00	61.96	-14.17	-9.13	0.00	0.00	-19.04	19.61
23	64	0.58	61.96	-22.46	-7.32	0.00	-10.23	0.00	21.95

WHEEL (0.00 + 11.18 + 13.85) = 15.73 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
1	23	0.66	55.04	-23.53	-9.21	0.00	-10.23	0.00	12.07
1	23	0.09	55.04	-15.45	-9.14	0.00	0.00	-19.27	11.18
23	64	0.66	55.04	-23.53	-7.43	0.00	-10.23	0.00	13.85

LEFT WHISTLE (0.00 + 20.57 + 18.75) = 22.76 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
1	23	0.58	62.91	-22.46	-9.20	0.00	-10.23	0.00	21.02
1	23	0.00	62.91	0.00	-9.13	0.00	0.00	-19.04	20.57
23	37	0.58	62.91	-22.46	-11.46	0.00	-10.23	0.00	18.75

RIGHT WHISTLE (0.00 + 20.30 + 0.00) = 20.30 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
37	61	0.58	62.91	-22.46	-9.91	0.00	-10.23	0.00	20.30

Segment Leq : 27.65 dBA

Total Leq All Segments: 27.65 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 32.42
(NIGHT): 27.65



STAMSON 5.0 NORMAL REPORT Date: 27-05-2011 16:44:13
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec04.te Time Period: Day/Night 16/8 hours
Description: GME11-033 - VIA RAIL WHISTLE - REC04

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

Train !Cont Type !weld	! Trains ! !(Left)	! Trains ! !(Right)	! Speed ! !(km/h)	!# loc ! !/Train!	!# Cars ! !/Train!	! Eng ! ! type
1. PASSANGER	6.0/1.0	6.0/1.0	150.0	1.0	4.0	!Diesel!

No

Data for Segment # 1: VIA (day/night)

Angle1 Angle2 : 1.00 deg 64.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 454.50 / 454.50 m
Receiver height : 1.50 / 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Whistle Angle : 37 deg Track 1
Barrier angle1 : 1.00 deg Angle2 : 61.00 deg
Barrier height : 6.00 m
Barrier receiver distance : 139.80 / 139.80 m
Source elevation : 92.00 m
Receiver elevation : 92.34 m
Barrier elevation : 92.00 m
Reference angle : 0.00



Results segment # 1: VIA (day)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	1.50	2.50	94.50
0.50	1.50	1.43	93.43

LOCOMOTIVE (0.00 + 36.37 + 23.50) = 36.59 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
1	61	0.22	66.73	-18.15	-4.98	0.00	0.00	-7.23	36.37
61	64	0.58	66.73	-23.48	-19.75	0.00	0.00	0.00	23.50

WHEEL (0.00 + 26.62 + 15.22) = 26.93 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
1	61	0.33	59.81	-19.70	-5.08	0.00	0.00	-8.41	26.62
61	64	0.66	59.81	-24.59	-20.00	0.00	0.00	0.00	15.22

LEFT WHISTLE (0.00 + 34.97 + 0.00) = 34.97 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
1	37	0.22	67.68	-18.15	-7.06	0.00	0.00	-7.51	34.97

RIGHT WHISTLE (0.00 + 33.02 + 0.00) = 33.02 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
37	59	0.22	67.68	-18.15	-9.62	0.00	0.00	-6.90	33.02

Segment Leq : 40.09 dBA

Total Leq All Segments: 40.09 dBA



Results segment # 1: VIA (night)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	1.50	2.50	94.50
0.50	1.50	1.43	93.43

LOCOMOTIVE (0.00 + 31.60 + 18.73) = 31.82 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
1	61	0.22	61.96	-18.15	-4.98	0.00	0.00	-7.23	31.60
61	64	0.58	61.96	-23.48	-19.75	0.00	0.00	0.00	18.73

WHEEL (0.00 + 21.85 + 10.45) = 22.15 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
1	61	0.33	55.04	-19.70	-5.08	0.00	0.00	-8.41	21.85
61	64	0.66	55.04	-24.59	-20.00	0.00	0.00	0.00	10.45

LEFT WHISTLE (0.00 + 30.19 + 0.00) = 30.19 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
1	37	0.22	62.91	-18.15	-7.06	0.00	0.00	-7.51	30.19

RIGHT WHISTLE (0.00 + 28.24 + 0.00) = 28.24 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
37	59	0.22	62.91	-18.15	-9.62	0.00	0.00	-6.90	28.24

Segment Leq : 35.31 dBA

Total Leq All Segments: 35.31 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 40.09
(NIGHT): 35.31



STAMSON 5.0 NORMAL REPORT Date: 27-05-2011 16:44:30
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec05.te Time Period: Day/Night 16/8 hours
Description: GME11-033 - VIA RAIL WHISTLE - REC05

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

Train !Cont Type !weld	! Trains ! !(Left)	! Trains ! !(Right)	! Speed ! !(km/h)	!# loc ! !/Train!	!# Cars ! !/Train!	! Eng ! ! type
1. PASSANGER	6.0/1.0	6.0/1.0	150.0	1.0	4.0	!Diesel!

No

Data for Segment # 1: VIA (day/night)

Angle1 Angle2 : -54.00 deg 70.00 deg
Wood depth : 0 (No woods.)
No of house rows : 5 / 5
House density : 85 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 351.60 / 351.60 m
Receiver height : 4.50 / 4.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Whistle Angle : 37 deg Track 1
Barrier angle1 : -54.00 deg Angle2 : 41.00 deg
Barrier height : 6.00 m
Barrier receiver distance : 36.87 / 36.87 m
Source elevation : 92.00 m
Receiver elevation : 92.75 m
Barrier elevation : 92.00 m
Reference angle : 0.00



Results segment # 1: VIA (day)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	4.50	5.12	97.12
0.50	4.50	4.75	96.75

LOCOMOTIVE (0.00 + 31.48 + 25.33) = 32.42 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-54	41	0.50	66.73	-20.48	-3.05	0.00	-11.72	0.00	31.48
-54	41	0.14	66.73	-15.55	-2.85	0.00	0.00	-5.53	42.80
41	70	0.50	66.73	-20.48	-9.20	0.00	-11.72	0.00	25.33

WHEEL (0.00 + 23.06 + 16.70) = 23.96 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-54	41	0.60	59.81	-21.92	-3.11	0.00	-11.72	0.00	23.06
-54	41	0.24	59.81	-16.99	-2.91	0.00	0.00	-6.01	33.89
41	70	0.60	59.81	-21.92	-9.46	0.00	-11.72	0.00	16.70

LEFT WHISTLE (0.00 + 30.45 + 0.00) = 30.45 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-21	37	0.50	67.68	-20.48	-5.03	0.00	-11.72	0.00	30.45
-21	37	0.14	67.68	-15.55	-4.95	0.00	0.00	-5.56	41.62

RIGHT WHISTLE (0.00 + 18.40 + 25.13) = 25.97 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
37	41	0.50	67.68	-20.48	-17.07	0.00	-11.72	0.00	18.40
37	41	0.14	67.68	-15.55	-16.68	0.00	0.00	-5.47	29.99
41	62	0.50	67.68	-20.48	-10.35	0.00	-11.72	0.00	25.13

Segment Leq : 35.44 dBA

Total Leq All Segments: 35.44 dBA



Results segment # 1: VIA (night)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	4.50	5.12	97.12
0.50	4.50	4.75	96.75

LOCOMOTIVE (0.00 + 26.71 + 20.56) = 27.65 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-54	41	0.50	61.96	-20.48	-3.05	0.00	-11.72	0.00	26.71
-54	41	0.14	61.96	-15.55	-2.85	0.00	0.00	-5.53	38.03
41	70	0.50	61.96	-20.48	-9.20	0.00	-11.72	0.00	20.56

WHEEL (0.00 + 18.29 + 11.93) = 19.19 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-54	41	0.60	55.04	-21.92	-3.11	0.00	-11.72	0.00	18.29
-54	41	0.24	55.04	-16.99	-2.91	0.00	0.00	-6.01	29.12
41	70	0.60	55.04	-21.92	-9.46	0.00	-11.72	0.00	11.93

LEFT WHISTLE (0.00 + 25.68 + 0.00) = 25.68 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-21	37	0.50	62.91	-20.48	-5.03	0.00	-11.72	0.00	25.68
-21	37	0.14	62.91	-15.55	-4.95	0.00	0.00	-5.56	36.85

RIGHT WHISTLE (0.00 + 13.63 + 20.36) = 21.20 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
37	41	0.50	62.91	-20.48	-17.07	0.00	-11.72	0.00	13.63
37	41	0.14	62.91	-15.55	-16.68	0.00	0.00	-5.47	25.22
41	62	0.50	62.91	-20.48	-10.35	0.00	-11.72	0.00	20.36

Segment Leq : 30.67 dBA

Total Leq All Segments: 30.67 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 35.44
(NIGHT): 30.67



STAMSON 5.0 NORMAL REPORT Date: 27-05-2011 16:44:50
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec06.te Time Period: Day/Night 16/8 hours
Description: GME11-033 - VIA RAIL WHISTLE - REC06

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

```
-----  
Train                    ! Trains                    ! Trains                    ! Speed !# loc !# Cars! Eng  
!Cont  
Type                    ! (Left)                    ! (Right)                    !(km/h) !/Train!/Train! type  
!weld  
-----+-----+-----+-----+-----+-----+-----+  
---  
1. PASSANGER            !    6.0/1.0            !    6.0/1.0            ! 150.0 !    1.0 !    4.0 !Diesel!  
No
```

Data for Segment # 1: VIA (day/night)

```
-----  
Angle1    Angle2                    : -52.00 deg    69.00 deg  
Wood depth                    :            0                    (No woods.)  
No of house rows                :            5 / 0  
Surface                        :            1                    (Absorptive ground surface)  
Receiver source distance        : 370.90 / 370.90 m  
Receiver height                 :    1.50 / 4.50        m  
Topography                     :            2                    (Flat/gentle slope; with barrier)  
Whistle Angle                 :            37 deg            Track 1  
Barrier angle1                 : -52.00 deg            Angle2 : 69.00 deg  
Barrier height                 :    10.00 m  
Barrier receiver distance        :    3.00 / 3.00        m  
Source elevation                :    92.00 m  
Receiver elevation               :    92.75 m  
Barrier elevation                :    92.75 m  
Reference angle                 :            0.00
```



Results segment # 1: VIA (day)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	1.50	1.51	94.26
0.50	1.50	1.49	94.24

LOCOMOTIVE (0.00 + 29.07 + 0.00) = 29.07 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-52	69	0.58	66.73	-22.08	-2.27	0.00	-13.31	0.00	29.07
-52	69	0.00	66.73	-13.93	-1.72	0.00	0.00	-20.00	31.07

WHEEL (0.00 + 21.04 + 0.00) = 21.04 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-52	69	0.66	59.81	-23.13	-2.33	0.00	-13.31	0.00	21.04
-52	69	0.09	59.81	-15.19	-1.81	0.00	0.00	-20.00	22.81

LEFT WHISTLE (0.00 + 27.01 + 0.00) = 27.01 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-18	37	0.58	67.68	-22.08	-5.28	0.00	-13.31	0.00	27.01
-18	37	0.00	67.68	-13.93	-5.15	0.00	0.00	-20.00	28.60

RIGHT WHISTLE (0.00 + 22.50 + 0.00) = 22.50 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
37	61	0.58	67.68	-22.08	-9.79	0.00	-13.31	0.00	22.50
37	61	0.00	67.68	-13.93	-8.68	0.00	0.00	-20.00	25.07

Segment Leq : 32.08 dBA

Total Leq All Segments: 32.08 dBA



Results segment # 1: VIA (night)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	4.50	4.49	97.24
0.50	4.50	4.46	97.21

LOCOMOTIVE (0.00 + 26.37 + 0.00) = 26.37 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-52	69	0.00	61.96	-13.93	-1.72	0.00	0.00	-19.93	26.37

WHEEL (0.00 + 19.44 + 0.00) = 19.44 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-52	69	0.00	55.04	-13.93	-1.72	0.00	0.00	-19.94	19.44

LEFT WHISTLE (0.00 + 23.83 + 0.00) = 23.83 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-18	37	0.00	62.91	-13.93	-5.15	0.00	0.00	-20.00	23.83

RIGHT WHISTLE (0.00 + 20.31 + 0.00) = 20.31 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
37	61	0.00	62.91	-13.93	-8.68	0.00	0.00	-19.98	20.31

Segment Leq : 29.40 dBA

Total Leq All Segments: 29.40 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 32.08
(NIGHT): 29.40



STAMSON 5.0 NORMAL REPORT Date: 27-05-2011 16:46:56
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec07.te Time Period: Day/Night 16/8 hours
Description: GME11-033 - VIA RAIL WHISTLE - REC07

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

```
-----  
Train                    ! Trains                    ! Trains                    ! Speed !# loc !# Cars! Eng  
!Cont  
Type                    ! (Left)                    ! (Right)                    !(km/h) !/Train!/Train! type  
!weld  
-----+-----+-----+-----+-----+-----+-----+  
---  
1. PASSANGER            !    6.0/1.0            !    6.0/1.0            ! 150.0 !    1.0 !    4.0 !Diesel!  
No
```

Data for Segment # 1: VIA (day/night)

```
-----  
Angle1    Angle2                    : -55.00 deg    65.00 deg  
Wood depth                    :            0            (No woods.)  
No of house rows                :            0 / 0  
Surface                        :            1            (Absorptive ground surface)  
Receiver source distance        : 398.30 / 398.30 m  
Receiver height                 :    1.50 / 1.50    m  
Topography                     :            2            (Flat/gentle slope; with barrier)  
Whistle Angle                  :            37 deg    Track 1  
Barrier angle1                 : -55.00 deg    Angle2 : 65.00 deg  
Barrier height                 :    10.00 m  
Barrier receiver distance       : 30.00 / 30.00    m  
Source elevation                :    92.00 m  
Receiver elevation              :    92.35 m  
Barrier elevation               :    91.90 m  
Reference angle                :            0.00
```



Results segment # 1: VIA (day)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	1.50	2.11	94.01
0.50	1.50	1.85	93.75

LOCOMOTIVE (0.00 + 33.70 + 0.00) = 33.70 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-55	65	0.00	66.73	-14.24	-1.76	0.00	0.00	-17.02	33.70

WHEEL (0.00 + 25.13 + 0.00) = 25.13 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-55	65	0.09	59.81	-15.52	-1.84	0.00	0.00	-17.31	25.13

LEFT WHISTLE (0.00 + 30.16 + 0.00) = 30.16 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-14	37	0.00	67.68	-14.24	-5.47	0.00	0.00	-17.81	30.16

RIGHT WHISTLE (0.00 + 28.42 + 0.00) = 28.42 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
37	60	0.00	67.68	-14.24	-8.87	0.00	0.00	-16.15	28.42

Segment Leq : 36.44 dBA

Total Leq All Segments: 36.44 dBA



Results segment # 1: VIA (night)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	1.50	2.11	94.01
0.50	1.50	1.85	93.75

LOCOMOTIVE (0.00 + 28.93 + 0.00) = 28.93 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-55	65	0.00	61.96	-14.24	-1.76	0.00	0.00	-17.02	28.93

WHEEL (0.00 + 20.36 + 0.00) = 20.36 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-55	65	0.09	55.04	-15.52	-1.84	0.00	0.00	-17.31	20.36

LEFT WHISTLE (0.00 + 25.39 + 0.00) = 25.39 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-14	37	0.00	62.91	-14.24	-5.47	0.00	0.00	-17.81	25.39

RIGHT WHISTLE (0.00 + 23.65 + 0.00) = 23.65 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
37	60	0.00	62.91	-14.24	-8.87	0.00	0.00	-16.15	23.65

Segment Leq : 31.67 dBA

Total Leq All Segments: 31.67 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 36.44
(NIGHT): 31.67



STAMSON 5.0 NORMAL REPORT Date: 27-05-2011 16:47:40
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec11.te Time Period: Day/Night 16/8 hours
Description: GME11-033 - VIA RAIL WHISTLE - REC11

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

```
-----  
Train                    ! Trains                    ! Trains                    ! Speed !# loc !# Cars! Eng  
!Cont  
Type                    ! (Left)                    ! (Right)                    !(km/h) !/Train!/Train! type  
!weld  
-----+-----+-----+-----+-----+-----+-----+  
---  
1. PASSANGER            !    6.0/1.0            !    6.0/1.0            ! 150.0 !    1.0 !    4.0 !Diesel!  
No
```

Data for Segment # 1: VIA (day/night)

```
-----  
Angle1    Angle2                    : -53.00 deg    68.00 deg  
Wood depth                    :            0            (No woods.)  
No of house rows                :            0 / 0  
Surface                         :            1            (Absorptive ground surface)  
Receiver source distance        : 379.80 / 379.80 m  
Receiver height                 :    1.50 / 1.50    m  
Topography                      :            2            (Flat/gentle slope; with barrier)  
Whistle Angle                  :            37 deg    Track 1  
Barrier angle1                 : -53.00 deg    Angle2 : 39.00 deg  
Barrier height                  :    10.00 m  
Barrier receiver distance        : 12.60 / 12.60    m  
Source elevation                :    92.00 m  
Receiver elevation               :    92.54 m  
Barrier elevation                :    92.24 m  
Reference angle                 :            0.00
```



Results segment # 1: VIA (day)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	1.50	1.87	94.11
0.50	1.50	1.75	93.99

LOCOMOTIVE (0.00 + 29.80 + 35.19) = 36.29 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-53	39	0.00	66.73	-14.03	-2.91	0.00	0.00	-19.98	29.80
39	68	0.58	66.73	-22.24	-9.30	0.00	0.00	0.00	35.19

WHEEL (0.00 + 21.56 + 27.04) = 28.12 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-53	39	0.09	59.81	-15.30	-2.96	0.00	0.00	-19.99	21.56
39	68	0.66	59.81	-23.30	-9.47	0.00	0.00	0.00	27.04

LEFT WHISTLE (0.00 + 28.39 + 0.00) = 28.39 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-17	37	0.00	67.68	-14.03	-5.25	0.00	0.00	-20.00	28.39

RIGHT WHISTLE (0.00 + 14.10 + 35.17) = 35.20 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
37	39	0.00	67.68	-14.03	-19.54	0.00	0.00	-20.00	14.10
39	61	0.58	67.68	-22.24	-10.27	0.00	0.00	0.00	35.17

Segment Leq : 39.50 dBA

Total Leq All Segments: 39.50 dBA



Results segment # 1: VIA (night)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	1.50	1.87	94.11
0.50	1.50	1.75	93.99

LOCOMOTIVE (0.00 + 25.03 + 30.42) = 31.52 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-53	39	0.00	61.96	-14.03	-2.91	0.00	0.00	-19.98	25.03
39	68	0.58	61.96	-22.24	-9.30	0.00	0.00	0.00	30.42

WHEEL (0.00 + 16.79 + 22.27) = 23.35 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-53	39	0.09	55.04	-15.30	-2.96	0.00	0.00	-19.99	16.79
39	68	0.66	55.04	-23.30	-9.47	0.00	0.00	0.00	22.27

LEFT WHISTLE (0.00 + 23.62 + 0.00) = 23.62 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-17	37	0.00	62.91	-14.03	-5.25	0.00	0.00	-20.00	23.62

RIGHT WHISTLE (0.00 + 9.33 + 30.40) = 30.43 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
37	39	0.00	62.91	-14.03	-19.54	0.00	0.00	-20.00	9.33
39	61	0.58	62.91	-22.24	-10.27	0.00	0.00	0.00	30.40

Segment Leq : 34.73 dBA

Total Leq All Segments: 34.73 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 39.50
(NIGHT): 34.73



STAMSON 5.0 NORMAL REPORT Date: 27-05-2011 16:47:58
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec13.te Time Period: Day/Night 16/8 hours
Description: GME11-033 - VIA RAIL WHISTLE - REC13

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

Train !Cont Type !weld	! Trains ! !(Left)	! Trains ! !(Right)	! Speed ! !(km/h)	!# loc ! !/Train!	!# Cars ! !/Train!	! Eng ! ! type
1. PASSANGER	6.0/1.0	6.0/1.0	150.0	1.0	4.0	!Diesel!

No

Data for Segment # 1: VIA (day/night)

Angle1 Angle2 : -49.00 deg 66.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 419.70 / 419.70 m
Receiver height : 1.50 / 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Whistle Angle : 37 deg Track 1
Barrier angle1 : -10.00 deg Angle2 : 60.00 deg
Barrier height : 15.00 m
Barrier receiver distance : 27.20 / 27.20 m
Source elevation : 92.00 m
Receiver elevation : 92.65 m
Barrier elevation : 92.59 m
Reference angle : 0.00



Results segment # 1: VIA (day)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	1.50	1.68	94.27
0.50	1.50	1.45	94.04

LOCOMOTIVE (36.75 + 28.16 + 27.02) = 37.70 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-49	-10	0.58	66.73	-22.93	-7.05	0.00	0.00	0.00	36.75
-10	60	0.00	66.73	-14.47	-4.10	0.00	0.00	-20.00	28.16
60	66	0.58	66.73	-22.93	-16.78	0.00	0.00	0.00	27.02

WHEEL (28.69 + 21.24 + 18.75) = 29.76 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-49	-10	0.66	59.81	-24.02	-7.10	0.00	0.00	0.00	28.69
-10	60	0.00	59.81	-14.47	-4.10	0.00	0.00	-20.00	21.24
60	66	0.66	59.81	-24.02	-17.04	0.00	0.00	0.00	18.75

LEFT WHISTLE (23.23 + 27.38 + 0.00) = 28.80 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-11	-10	0.58	67.68	-22.93	-21.52	0.00	0.00	0.00	23.23
-10	37	0.00	67.68	-14.47	-5.83	0.00	0.00	-20.00	27.38

RIGHT WHISTLE (0.00 + 24.21 + 0.00) = 24.21 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
37	60	0.00	67.68	-14.47	-9.01	0.00	0.00	-20.00	24.21

Segment Leq : 38.95 dBA

Total Leq All Segments: 38.95 dBA



Results segment # 1: VIA (night)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	1.50	1.68	94.27
0.50	1.50	1.45	94.04

LOCOMOTIVE (31.98 + 23.39 + 22.25) = 32.93 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-49	-10	0.58	61.96	-22.93	-7.05	0.00	0.00	0.00	31.98
-10	60	0.00	61.96	-14.47	-4.10	0.00	0.00	-20.00	23.39
60	66	0.58	61.96	-22.93	-16.78	0.00	0.00	0.00	22.25

WHEEL (23.92 + 16.47 + 13.98) = 24.99 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-49	-10	0.66	55.04	-24.02	-7.10	0.00	0.00	0.00	23.92
-10	60	0.00	55.04	-14.47	-4.10	0.00	0.00	-20.00	16.47
60	66	0.66	55.04	-24.02	-17.04	0.00	0.00	0.00	13.98

LEFT WHISTLE (18.46 + 22.61 + 0.00) = 24.02 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-11	-10	0.58	62.91	-22.93	-21.52	0.00	0.00	0.00	18.46
-10	37	0.00	62.91	-14.47	-5.83	0.00	0.00	-20.00	22.61

RIGHT WHISTLE (0.00 + 19.44 + 0.00) = 19.44 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
37	60	0.00	62.91	-14.47	-9.01	0.00	0.00	-20.00	19.44

Segment Leq : 34.18 dBA

Total Leq All Segments: 34.18 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 38.95
(NIGHT): 34.18



STAMSON 5.0 NORMAL REPORT Date: 27-05-2011 16:48:23
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec17.te Time Period: Day/Night 16/8 hours
 Description: GME11-033 - VIA RAIL WHISTLE - REC17

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

```

-----
Train          ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng
!Cont
Type          ! (Left)     ! (Right)    !(km/h) !/Train!/Train! type
!weld
-----+-----+-----+-----+-----+-----+-----+
---
1. PASSANGER  !   6.0/1.0  !   6.0/1.0  ! 150.0 !   1.0 !   4.0 !Diesel!
No
  
```

Data for Segment # 1: VIA (day/night)

```

-----
Angle1  Angle2      : -51.00 deg  -25.00 deg
Wood depth      :           0   (No woods.)
No of house rows :           0 / 0
Surface         :           1   (Absorptive ground surface)
Receiver source distance : 386.60 / 386.60 m
Receiver height :    1.50 / 1.50 m
Topography      :           2   (Flat/gentle slope; with barrier)
Whistle Angle  :           37 deg  Track 1
Barrier angle1  : -51.00 deg  Angle2 : -25.00 deg
Barrier height  :           7.00 m
Barrier receiver distance : 35.27 / 35.27 m
Source elevation :    92.00 m
Receiver elevation :    92.59 m
Barrier elevation :    92.00 m
Reference angle :           0.00
  
```



Rail data, segment # 2: VIA2 (day/night)

Train !Cont Type !weld	! Trains ! !(Left)	! Trains ! !(Right)	! Speed ! !(km/h)	!# loc ! !/Train!	!# Cars ! !/Train!	Eng ! type
1. PASSENGER	6.0/1.0	6.0/1.0	150.0	1.0	4.0	Diesel!

Data for Segment # 2: VIA2 (day/night)

Angle1 Angle2 : -25.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 386.60 / 386.60 m
Receiver height : 1.50 / 1.50 m
Topography : 4 (Elevated; with barrier)
Whistle Angle : 37 deg Track 1
Barrier angle1 : -25.00 deg Angle2 : 0.00 deg
Barrier height : 10.00 m
Elevation : 0.00 m
Barrier receiver distance : 20.21 / 20.21 m
Source elevation : 92.00 m
Receiver elevation : 92.59 m
Barrier elevation : 92.75 m
Reference angle : 0.00



Results segment # 1: VIA (day)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	1.50	2.26	94.26
0.50	1.50	1.94	93.94

LOCOMOTIVE (0.00 + 29.57 + 0.00) = 29.57 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-51	-25	0.17	66.73	-16.44	-8.58	0.00	0.00	-12.14	29.57

WHEEL (0.00 + 20.53 + 0.00) = 20.53 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-51	-25	0.27	59.81	-17.92	-8.70	0.00	0.00	-12.65	20.53

LEFT WHISTLE (18.46 + 22.61 + 0.00) = 0.00 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-16	-16	0.00	67.68	0.00	-21.52	0.00	0.00	0.00	18.46
-16	-25	0.00	67.68	0.00	-5.83	0.00	0.00	0.00	22.61

Segment Leq : 30.08 dBA



Results segment # 2: VIA2 (day)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	1.50	1.44	94.19
0.50	1.50	1.26	94.01

LOCOMOTIVE (0.00 + 24.06 + 0.00) = 24.06 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-25	0	0.00	66.73	-14.11	-8.57	0.00	0.00	-19.98	24.06

WHEEL (0.00 + 15.84 + 0.00) = 15.84 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-25	0	0.09	59.81	-15.38	-8.59	0.00	0.00	-20.00	15.84

LEFT WHISTLE (0.00 + 22.98 + 0.00) = 22.98 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-16	0	0.00	67.68	0.00	-10.59	0.00	0.00	-20.00	22.98

Segment Leq : 26.92 dBA

Total Leq All Segments: 31.79 dBA



Results segment # 1: VIA (night)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	1.50	2.26	94.26
0.50	1.50	1.94	93.94

LOCOMOTIVE (0.00 + 24.80 + 0.00) = 24.80 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-51	-25	0.17	61.96	-16.44	-8.58	0.00	0.00	-12.14	24.80

WHEEL (0.00 + 15.76 + 0.00) = 15.76 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-51	-25	0.27	55.04	-17.92	-8.70	0.00	0.00	-12.65	15.76

LEFT WHISTLE (0.00 + 22.98 + 0.00) = 0.00 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-16	-25	0.00	62.91	0.00	-10.59	0.00	0.00	0.00	22.98

Segment Leq : 25.31 dBA



Results segment # 2: VIA2 (night)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	1.50	1.44	94.19
0.50	1.50	1.26	94.01

LOCOMOTIVE (0.00 + 19.29 + 0.00) = 19.29 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-25	0	0.00	61.96	-14.11	-8.57	0.00	0.00	-19.98	19.29

WHEEL (0.00 + 11.07 + 0.00) = 11.07 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-25	0	0.09	55.04	-15.38	-8.59	0.00	0.00	-20.00	11.07

LEFT WHISTLE (0.00 + 18.21 + 0.00) = 18.21 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-16	0	0.00	62.91	0.00	-10.59	0.00	0.00	-20.00	18.21

Segment Leq : 22.15 dBA

Total Leq All Segments: 27.02 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 31.79
(NIGHT): 27.02



STAMSON 5.0 NORMAL REPORT Date: 27-05-2011 16:48:49
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: recl8.te Time Period: Day/Night 16/8 hours
Description: GME11-033 - VIA RAIL WHISTLE - REC18

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

Train !Cont Type !weld	! Trains ! !(Left)	! Trains ! !(Right)	! Speed ! !(km/h)	!# loc ! !/Train!	!# Cars ! !/Train!	! Eng ! ! type
1. PASSANGER	6.0/1.0	6.0/1.0	150.0	1.0	4.0	!Diesel!

Data for Segment # 1: VIA (day/night)

Angle1 Angle2 : -44.00 deg -7.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 494.20 / 494.20 m
Receiver height : 1.50 / 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Whistle Angle : 37 deg Track 1
Barrier angle1 : -44.00 deg Angle2 : -7.00 deg
Barrier height : 7.00 m
Barrier receiver distance : 139.60 / 139.60 m
Source elevation : 92.00 m
Receiver elevation : 92.77 m
Barrier elevation : 92.00 m
Reference angle : 0.00



Rail data, segment # 2: VIA2 (day/night)

```
-----  
Train          ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  
!Cont  
Type          ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type  
!weld  
-----+-----+-----+-----+-----+-----+-----+  
---  
  1. PASSENGER !   6.0/1.0   !   6.0/1.0   ! 150.0 !   1.0 !   4.0 !Diesel!  
No
```

Data for Segment # 2: VIA2 (day/night)

```
-----  
Angle1  Angle2      :  -7.00 deg   0.00 deg  
Wood depth      :           0   (No woods.)  
No of house rows :           0 / 0  
Surface         :           1   (Absorptive ground surface)  
Receiver source distance : 386.60 / 386.60 m  
Receiver height :    1.50 / 1.50 m  
Topography      :           2   (Flat/gentle slope; with barrier)  
Whistle Angle  :    37 deg   Track 1  
Barrier angle1  :  -7.00 deg   Angle2 : -2.00 deg  
Barrier height  :    10.00 m  
Barrier receiver distance : 127.90 / 127.90 m  
Source elevation :    92.00 m  
Receiver elevation :    92.77 m  
Barrier elevation :    92.75 m  
Reference angle :     0.00
```



Results segment # 1: VIA (day)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	1.50	2.76	94.76
0.50	1.50	1.77	93.77

LOCOMOTIVE (0.00 + 33.90 + 0.00) = 33.90 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-44	-7	0.17	66.73	-17.68	-6.96	0.00	0.00	-8.18	33.90

WHEEL (0.00 + 24.19 + 0.00) = 24.19 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-44	-7	0.27	59.81	-19.28	-7.01	0.00	0.00	-9.33	24.19

LEFT WHISTLE (0.00 + 18.21 + 0.00) = 0.00 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-3	-7	0.00	67.68	0.00	-10.59	0.00	0.00	0.00	18.21

Segment Leq : 34.34 dBA



Results segment # 2: VIA2 (day)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	1.50	2.09	94.84
0.50	1.50	0.93	93.68

LOCOMOTIVE (0.00 + 23.72 + 24.82) = 27.31 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-7	-2	0.00	66.73	-14.11	-15.56	0.00	0.00	-13.34	23.72
-2	0	0.58	66.73	-22.37	-19.54	0.00	0.00	0.00	24.82

WHEEL (0.00 + 14.39 + 16.84) = 18.80 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-7	-2	0.09	59.81	-15.38	-15.56	0.00	0.00	-14.47	14.39
-2	0	0.66	59.81	-23.43	-19.54	0.00	0.00	0.00	16.84

LEFT WHISTLE (0.00 + 24.67 + 25.77) = 28.27 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-7	-2	0.00	67.68	0.00	-15.56	0.00	0.00	-13.34	24.67
-2	0	0.00	67.68	0.00	-19.54	0.00	0.00	0.00	25.77

Segment Leq : 31.09 dBA

Total Leq All Segments: 36.02 dBA



Results segment # 1: VIA (night)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	1.50	2.76	94.76
0.50	1.50	1.77	93.77

LOCOMOTIVE (0.00 + 29.13 + 0.00) = 29.13 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-44	-7	0.17	61.96	-17.68	-6.96	0.00	0.00	-8.18	29.13

WHEEL (0.00 + 19.42 + 0.00) = 19.42 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-44	-7	0.27	55.04	-19.28	-7.01	0.00	0.00	-9.33	19.42

LEFT WHISTLE (0.00 + 24.67 + 25.77) = 0.00 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-3	-7	0.00	62.91	0.00	-15.56	0.00	0.00	0.00	24.67
-7	-7	0.00	62.91	0.00	-19.54	0.00	0.00	0.00	25.77

Segment Leq : 29.57 dBA



Results segment # 2: VIA2 (night)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	1.50	2.09	94.84
0.50	1.50	0.93	93.68

LOCOMOTIVE (0.00 + 18.95 + 20.05) = 22.54 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-7	-2	0.00	61.96	-14.11	-15.56	0.00	0.00	-13.34	18.95
-2	0	0.58	61.96	-22.37	-19.54	0.00	0.00	0.00	20.05

WHEEL (0.00 + 9.62 + 12.07) = 14.02 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-7	-2	0.09	55.04	-15.38	-15.56	0.00	0.00	-14.47	9.62
-2	0	0.66	55.04	-23.43	-19.54	0.00	0.00	0.00	12.07

LEFT WHISTLE (0.00 + 19.90 + 21.00) = 23.50 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-7	-2	0.00	62.91	0.00	-15.56	0.00	0.00	-13.34	19.90
-2	0	0.00	62.91	0.00	-19.54	0.00	0.00	0.00	21.00

Segment Leq : 26.32 dBA

Total Leq All Segments: 31.25 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 36.02
(NIGHT): 31.25



STAMSON 5.0 NORMAL REPORT Date: 27-05-2011 16:49:12
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec19.te Time Period: Day/Night 16/8 hours
Description: GME11-033 - VIA RAIL WHISTLE - REC19

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

Train !Cont Type !weld	! Trains ! !(Left)	! Trains ! !(Right)	! Speed ! !(km/h)	!# loc ! !/Train!	!# Cars ! !/Train!	! Eng ! ! type
1. PASSANGER	6.0/1.0	6.0/1.0	150.0	1.0	4.0	!Diesel!

No

Data for Segment # 1: VIA (day/night)

Angle1 Angle2 : -53.00 deg 68.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 376.40 / 376.40 m
Receiver height : 1.50 / 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Whistle Angle : 37 deg Track 1
Barrier angle1 : -53.00 deg Angle2 : 68.00 deg
Barrier height : 10.00 m
Barrier receiver distance : 9.50 / 9.50 m
Source elevation : 92.00 m
Receiver elevation : 92.54 m
Barrier elevation : 92.75 m
Reference angle : 0.00



Results segment # 1: VIA (day)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	1.50	1.34	94.09
0.50	1.50	1.25	94.00

LOCOMOTIVE (0.00 + 31.05 + 0.00) = 31.05 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-53	68	0.00	66.73	-14.00	-1.72	0.00	0.00	-19.96	31.05

WHEEL (0.00 + 22.78 + 0.00) = 22.78 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-53	68	0.09	59.81	-15.26	-1.81	0.00	0.00	-19.96	22.78

LEFT WHISTLE (0.00 + 28.47 + 0.00) = 28.47 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-17	37	0.00	67.68	-14.00	-5.21	0.00	0.00	-20.00	28.47

RIGHT WHISTLE (0.00 + 24.97 + 0.00) = 24.97 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
37	61	0.00	67.68	-14.00	-8.72	0.00	0.00	-20.00	24.97

Segment Leq : 33.95 dBA

Total Leq All Segments: 33.95 dBA



Results segment # 1: VIA (night)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	1.50	1.34	94.09
0.50	1.50	1.25	94.00

LOCOMOTIVE (0.00 + 26.28 + 0.00) = 26.28 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-53	68	0.00	61.96	-14.00	-1.72	0.00	0.00	-19.96	26.28

WHEEL (0.00 + 18.00 + 0.00) = 18.00 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-53	68	0.09	55.04	-15.26	-1.81	0.00	0.00	-19.96	18.00

LEFT WHISTLE (0.00 + 23.70 + 0.00) = 23.70 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-17	37	0.00	62.91	-14.00	-5.21	0.00	0.00	-20.00	23.70

RIGHT WHISTLE (0.00 + 20.20 + 0.00) = 20.20 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
37	61	0.00	62.91	-14.00	-8.72	0.00	0.00	-20.00	20.20

Segment Leq : 29.17 dBA

Total Leq All Segments: 29.17 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 33.95
(NIGHT): 29.17



STAMSON 5.0 NORMAL REPORT Date: 27-05-2011 16:50:04
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec20.te Time Period: Day/Night 16/8 hours
Description: GME11-033 - VIA RAIL WHISTLE - REC20

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

Train !Cont Type !weld	! Trains ! !(Left)	! Trains ! !(Right)	! Speed ! !(km/h)	!# loc ! !/Train!	!# Cars ! !/Train!	! Eng ! ! type
1. PASSANGER	6.0/1.0	6.0/1.0	150.0	1.0	4.0	Diesel!

Data for Segment # 1: VIA (day/night)

Angle1 Angle2 : -48.00 deg 65.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 440.80 / 440.80 m
Receiver height : 1.50 / 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Whistle Angle : 37 deg Track 1
Barrier angle1 : -48.00 deg Angle2 : 65.00 deg
Barrier height : 15.00 m
Barrier receiver distance : 7.05 / 7.05 m
Source elevation : 92.00 m
Receiver elevation : 92.43 m
Barrier elevation : 92.43 m
Reference angle : 0.00



Results segment # 1: VIA (day)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	1.50	1.53	93.96
0.50	1.50	1.48	93.91

LOCOMOTIVE (0.00 + 30.03 + 0.00) = 30.03 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-48	65	0.00	66.73	-14.68	-2.02	0.00	0.00	-20.00	30.03

WHEEL (0.00 + 23.10 + 0.00) = 23.10 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-48	65	0.00	59.81	-14.68	-2.02	0.00	0.00	-20.00	23.10

LEFT WHISTLE (0.00 + 27.05 + 0.00) = 27.05 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-9	37	0.00	67.68	-14.68	-5.95	0.00	0.00	-20.00	27.05

RIGHT WHISTLE (0.00 + 23.86 + 0.00) = 23.86 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
37	59	0.00	67.68	-14.68	-9.14	0.00	0.00	-20.00	23.86

Segment Leq : 32.93 dBA

Total Leq All Segments: 32.93 dBA



Results segment # 1: VIA (night)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	1.50	1.53	93.96
0.50	1.50	1.48	93.91

LOCOMOTIVE (0.00 + 25.26 + 0.00) = 25.26 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-48	65	0.00	61.96	-14.68	-2.02	0.00	0.00	-20.00	25.26

WHEEL (0.00 + 18.33 + 0.00) = 18.33 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-48	65	0.00	55.04	-14.68	-2.02	0.00	0.00	-20.00	18.33

LEFT WHISTLE (0.00 + 22.28 + 0.00) = 22.28 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-9	37	0.00	62.91	-14.68	-5.95	0.00	0.00	-20.00	22.28

RIGHT WHISTLE (0.00 + 19.09 + 0.00) = 19.09 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
37	59	0.00	62.91	-14.68	-9.14	0.00	0.00	-20.00	19.09

Segment Leq : 28.16 dBA

Total Leq All Segments: 28.16 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 32.93
(NIGHT): 28.16



STAMSON 5.0 NORMAL REPORT Date: 27-05-2011 16:51:21
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec22.te Time Period: Day/Night 16/8 hours
Description: GME11-033 - VIA RAIL WHISTLE - REC22

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

Train !Cont Type !weld	! Trains ! !(Left)	! Trains ! !(Right)	! Speed ! !(km/h)	!# loc ! !/Train!	!# Cars ! !/Train!	! Eng ! ! type
1. PASSANGER	6.0/1.0	6.0/1.0	150.0	1.0	4.0	!Diesel!

No

Data for Segment # 1: VIA (day/night)

Angle1 Angle2 : -53.00 deg 64.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 418.80 / 418.80 m
Receiver height : 1.50 / 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Whistle Angle : 37 deg Track 1
Barrier angle1 : -53.00 deg Angle2 : 64.00 deg
Barrier height : 16.00 m
Barrier receiver distance : 6.84 / 6.84 m
Source elevation : 92.00 m
Receiver elevation : 92.30 m
Barrier elevation : 92.30 m
Reference angle : 0.00



Results segment # 1: VIA (day)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	1.50	1.54	93.84
0.50	1.50	1.48	93.78

LOCOMOTIVE (0.00 + 30.40 + 0.00) = 30.40 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-53	64	0.00	66.73	-14.46	-1.87	0.00	0.00	-20.00	30.40

WHEEL (0.00 + 23.48 + 0.00) = 23.48 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-53	64	0.00	59.81	-14.46	-1.87	0.00	0.00	-20.00	23.48

LEFT WHISTLE (0.00 + 27.52 + 0.00) = 27.52 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-11	37	0.00	67.68	-14.46	-5.70	0.00	0.00	-20.00	27.52

RIGHT WHISTLE (0.00 + 24.22 + 0.00) = 24.22 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
37	60	0.00	67.68	-14.46	-9.00	0.00	0.00	-20.00	24.22

Segment Leq : 33.32 dBA

Total Leq All Segments: 33.32 dBA



Results segment # 1: VIA (night)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	1.50	1.54	93.84
0.50	1.50	1.48	93.78

LOCOMOTIVE (0.00 + 25.63 + 0.00) = 25.63 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-53	64	0.00	61.96	-14.46	-1.87	0.00	0.00	-20.00	25.63

WHEEL (0.00 + 18.71 + 0.00) = 18.71 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-53	64	0.00	55.04	-14.46	-1.87	0.00	0.00	-20.00	18.71

LEFT WHISTLE (0.00 + 22.75 + 0.00) = 22.75 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-11	37	0.00	62.91	-14.46	-5.70	0.00	0.00	-20.00	22.75

RIGHT WHISTLE (0.00 + 19.45 + 0.00) = 19.45 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
37	60	0.00	62.91	-14.46	-9.00	0.00	0.00	-20.00	19.45

Segment Leq : 28.55 dBA

Total Leq All Segments: 28.55 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 33.32
(NIGHT): 28.55



STAMSON 5.0 NORMAL REPORT Date: 27-05-2011 16:51:44
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec23.te Time Period: Day/Night 16/8 hours
Description: GME11-033 - VIA RAIL WHISTLE - REC23

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

Train !Cont Type !weld	! Trains ! !(Left)	! Trains ! !(Right)	! Speed ! !(km/h)	!# loc ! !/Train!	!# Cars ! !/Train!	! Eng ! ! type
1. PASSANGER	6.0/1.0	6.0/1.0	150.0	1.0	4.0	!Diesel!

Data for Segment # 1: VIA (day/night)

Angle1 Angle2 : -49.00 deg 61.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 482.90 / 482.90 m
Receiver height : 1.50 / 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Whistle Angle : 37 deg Track 1
Barrier angle1 : -49.00 deg Angle2 : 61.00 deg
Barrier height : 16.00 m
Barrier receiver distance : 3.40 / 3.40 m
Source elevation : 92.00 m
Receiver elevation : 92.30 m
Barrier elevation : 92.30 m
Reference angle : 0.00



Results segment # 1: VIA (day)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	1.50	1.52	93.82
0.50	1.50	1.49	93.79

LOCOMOTIVE (0.00 + 29.51 + 0.00) = 29.51 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-49	61	0.00	66.73	-15.08	-2.14	0.00	0.00	-20.00	29.51

WHEEL (0.00 + 22.59 + 0.00) = 22.59 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-49	61	0.00	59.81	-15.08	-2.14	0.00	0.00	-20.00	22.59

LEFT WHISTLE (0.00 + 26.21 + 0.00) = 26.21 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-4	37	0.00	67.68	-15.08	-6.40	0.00	0.00	-20.00	26.21

RIGHT WHISTLE (0.00 + 23.21 + 0.00) = 23.21 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
37	58	0.00	67.68	-15.08	-9.39	0.00	0.00	-20.00	23.21

Segment Leq : 32.31 dBA

Total Leq All Segments: 32.31 dBA



Results segment # 1: VIA (night)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	1.50	1.52	93.82
0.50	1.50	1.49	93.79

LOCOMOTIVE (0.00 + 24.74 + 0.00) = 24.74 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-49	61	0.00	61.96	-15.08	-2.14	0.00	0.00	-20.00	24.74

WHEEL (0.00 + 17.82 + 0.00) = 17.82 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-49	61	0.00	55.04	-15.08	-2.14	0.00	0.00	-20.00	17.82

LEFT WHISTLE (0.00 + 21.44 + 0.00) = 21.44 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-4	37	0.00	62.91	-15.08	-6.40	0.00	0.00	-20.00	21.44

RIGHT WHISTLE (0.00 + 18.44 + 0.00) = 18.44 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
37	58	0.00	62.91	-15.08	-9.39	0.00	0.00	-20.00	18.44

Segment Leq : 27.54 dBA

Total Leq All Segments: 27.54 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 32.31
(NIGHT): 27.54



STAMSON 5.0 NORMAL REPORT Date: 27-05-2011 16:52:29
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec24.te Time Period: Day/Night 16/8 hours
Description: GME11-033 - VIA RAIL WHISTLE - REC24

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

Train !Cont Type !weld	! Trains ! !(Left)	! Trains ! !(Right)	! Speed ! !(km/h)	!# loc ! !/Train!	!# Cars ! !/Train!	! Eng ! ! type
1. PASSANGER	6.0/1.0	6.0/1.0	150.0	1.0	4.0	!Diesel!

No

Data for Segment # 1: VIA (day/night)

Angle1 Angle2 : -57.00 deg 64.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 397.20 / 397.20 m
Receiver height : 1.50 / 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Whistle Angle : 37 deg Track 1
Barrier angle1 : -57.00 deg Angle2 : 12.00 deg
Barrier height : 10.00 m
Barrier receiver distance : 27.77 / 27.77 m
Source elevation : 92.00 m
Receiver elevation : 92.30 m
Barrier elevation : 91.90 m
Reference angle : 0.00



Results segment # 1: VIA (day)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	1.50	2.05	93.95
0.50	1.50	1.81	93.71

LOCOMOTIVE (0.00 + 30.66 + 38.07) = 38.79 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-57	12	0.00	66.73	-14.23	-4.16	0.00	0.00	-17.68	30.66
12	64	0.58	66.73	-22.55	-6.11	0.00	0.00	0.00	38.07

WHEEL (0.00 + 22.13 + 29.99) = 30.65 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-57	12	0.09	59.81	-15.51	-4.22	0.00	0.00	-17.95	22.13
12	64	0.66	59.81	-23.62	-6.20	0.00	0.00	0.00	29.99

LEFT WHISTLE (0.00 + 26.71 + 36.29) = 36.75 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-14	12	0.00	67.68	0.00	-8.37	0.00	0.00	-18.38	26.71
12	37	0.58	67.68	-22.55	-8.84	0.00	0.00	0.00	36.29

RIGHT WHISTLE (0.00 + 35.19 + 0.00) = 35.19 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
37	60	0.58	67.68	-22.55	-9.94	0.00	0.00	0.00	35.19

Segment Leq : 42.24 dBA

Total Leq All Segments: 42.24 dBA



Results segment # 1: VIA (night)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	1.50	2.05	93.95
0.50	1.50	1.81	93.71

LOCOMOTIVE (0.00 + 25.89 + 33.29) = 34.02 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-57	12	0.00	61.96	-14.23	-4.16	0.00	0.00	-17.68	25.89
12	64	0.58	61.96	-22.55	-6.11	0.00	0.00	0.00	33.29

WHEEL (0.00 + 17.36 + 25.22) = 25.88 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-57	12	0.09	55.04	-15.51	-4.22	0.00	0.00	-17.95	17.36
12	64	0.66	55.04	-23.62	-6.20	0.00	0.00	0.00	25.22

LEFT WHISTLE (0.00 + 21.94 + 31.52) = 31.98 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-14	12	0.00	62.91	0.00	-8.37	0.00	0.00	-18.38	21.94
12	37	0.58	62.91	-22.55	-8.84	0.00	0.00	0.00	31.52

RIGHT WHISTLE (0.00 + 30.41 + 0.00) = 30.41 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
37	60	0.58	62.91	-22.55	-9.94	0.00	0.00	0.00	30.41

Segment Leq : 37.47 dBA

Total Leq All Segments: 37.47 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 42.24
(NIGHT): 37.47



STAMSON 5.0 NORMAL REPORT Date: 27-05-2011 16:52:48
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec25.te Time Period: Day/Night 16/8 hours
Description: GME11-033 - VIA RAIL WHISTLE - REC25

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

```
-----  
Train                    ! Trains                    ! Trains                    ! Speed !# loc !# Cars! Eng  
!Cont  
Type                    ! (Left)                    ! (Right)                    !(km/h) !/Train!/Train! type  
!weld  
-----+-----+-----+-----+-----+-----+-----+  
---  
1. PASSANGER            !    6.0/1.0            !    6.0/1.0            ! 150.0 !    1.0 !    4.0 !Diesel!  
No
```

Data for Segment # 1: VIA (day/night)

```
-----  
Angle1    Angle2                    : -57.00 deg    64.00 deg  
Wood depth                    :            0            (No woods.)  
No of house rows                :            3 / 0  
Surface                        :            1            (Absorptive ground surface)  
Receiver source distance        : 443.00 / 443.00 m  
Receiver height                 :    1.50 / 1.50    m  
Topography                     :            2            (Flat/gentle slope; with barrier)  
Whistle Angle                  :            37 deg    Track 1  
Barrier angle1                 : -54.00 deg    Angle2 : 0.00 deg  
Barrier height                 :    16.00 m  
Barrier receiver distance       : 62.40 / 62.40    m  
Source elevation                :    92.00 m  
Receiver elevation              :    92.34 m  
Barrier elevation               :    92.30 m  
Reference angle                 :            0.00
```



Results segment # 1: VIA (day)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	1.50	1.84	94.14
0.50	1.50	1.35	93.65

LOCOMOTIVE (18.78 + 27.34 + 32.94) = 34.13 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-57	-54	0.58	66.73	-23.30	-19.23	0.00	-5.42	0.00	18.78
-54	0	0.58	66.73	-23.30	-5.63	0.00	-5.42	0.00	32.38
-54	0	0.00	66.73	-14.70	-5.23	0.00	0.00	-19.46	27.34
0	64	0.58	66.73	-23.30	-5.07	0.00	-5.42	0.00	32.94

WHEEL (10.57 + 20.24 + 24.85) = 26.26 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-57	-54	0.66	59.81	-24.41	-19.41	0.00	-5.42	0.00	10.57
-54	0	0.66	59.81	-24.41	-5.68	0.00	-5.42	0.00	24.31
-54	0	0.00	59.81	-14.70	-5.23	0.00	0.00	-19.64	20.24
0	64	0.66	59.81	-24.41	-5.14	0.00	-5.42	0.00	24.85

LEFT WHISTLE (0.00 + 19.72 + 31.91) = 32.16 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-8	0	0.58	67.68	-23.30	-13.27	0.00	-5.42	0.00	25.69
-8	0	0.00	67.68	0.00	-13.26	0.00	0.00	-20.00	19.72
0	37	0.58	67.68	-23.30	-7.05	0.00	-5.42	0.00	31.91

RIGHT WHISTLE (0.00 + 28.77 + 0.00) = 28.77 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
37	59	0.58	67.68	-23.30	-10.19	0.00	-5.42	0.00	28.77

Segment Leq : 37.33 dBA

Total Leq All Segments: 37.33 dBA



Results segment # 1: VIA (night)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	1.50	1.84	94.14
0.50	1.50	1.35	93.65

LOCOMOTIVE (19.43 + 22.56 + 33.59) = 34.07 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-57	-54	0.58	61.96	-23.30	-19.23	0.00	0.00	0.00	19.43
-54	0	0.00	61.96	-14.70	-5.23	0.00	0.00	-19.46	22.56
0	64	0.58	61.96	-23.30	-5.07	0.00	0.00	0.00	33.59

WHEEL (11.22 + 15.47 + 25.49) = 26.05 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-57	-54	0.66	55.04	-24.41	-19.41	0.00	0.00	0.00	11.22
-54	0	0.00	55.04	-14.70	-5.23	0.00	0.00	-19.64	15.47
0	64	0.66	55.04	-24.41	-5.14	0.00	0.00	0.00	25.49

LEFT WHISTLE (0.00 + 14.95 + 32.55) = 32.63 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-8	0	0.00	62.91	0.00	-13.26	0.00	0.00	-20.00	14.95
0	37	0.58	62.91	-23.30	-7.05	0.00	0.00	0.00	32.55

RIGHT WHISTLE (0.00 + 29.41 + 0.00) = 29.41 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
37	59	0.58	62.91	-23.30	-10.19	0.00	0.00	0.00	29.41

Segment Leq : 37.53 dBA
 Total Leq All Segments: 37.53 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 37.33
 (NIGHT): 37.53



STAMSON 5.0 NORMAL REPORT Date: 01-06-2011 19:37:20
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec26.te Time Period: Day/Night 16/8 hours
Description: GME11-033 - VIA RAIL NOISE - REC26

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

Train !Cont Type !weld	! Trains ! !(Left)	! Trains ! !(Right)	! Speed ! !(km/h)	!# loc ! !/Train!	!# Cars ! !/Train!	! Eng ! ! type
1. PASSANGER	6.0/1.0	6.0/1.0	150.0	1.0	4.0	!Diesel!

Data for Segment # 1: VIA (day/night)

Angle1 Angle2 : 1.00 deg 64.00 deg
Wood depth : 0 (No woods.)
No of house rows : 3 / 3
House density : 95 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 392.00 / 392.00 m
Receiver height : 9.35 / 9.35 m
Topography : 2 (Flat/gentle slope; with barrier)
Whistle Angle : 37 deg Track 1
Barrier angle1 : 1.00 deg Angle2 : 23.00 deg
Barrier height : 10.00 m
Barrier receiver distance : 23.00 / 23.00 m
Source elevation : 92.00 m
Receiver elevation : 92.30 m
Barrier elevation : 91.90 m
Reference angle : 0.00



Results segment # 1: VIA (day)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	9.35	9.42	101.32
0.50	9.35	9.21	101.11

LOCOMOTIVE (0.00 + 28.20 + 30.41) = 32.46 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
1	23	0.35	66.73	-19.13	-9.17	0.00	-10.23	0.00	28.20
1	23	0.00	66.73	-14.17	-9.13	0.00	0.00	-5.39	38.04
23	64	0.35	66.73	-19.13	-6.97	0.00	-10.23	0.00	30.41

WHEEL (0.00 + 19.78 + 21.84) = 23.94 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
1	23	0.45	59.81	-20.61	-9.18	0.00	-10.23	0.00	19.78
1	23	0.00	59.81	-14.17	-9.13	0.00	0.00	-5.70	30.81
23	64	0.45	59.81	-20.61	-7.12	0.00	-10.23	0.00	21.84

LEFT WHISTLE (0.00 + 29.15 + 27.01) = 31.22 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
1	23	0.35	67.68	-19.13	-9.17	0.00	-10.23	0.00	29.15
1	23	0.00	67.68	0.00	-9.13	0.00	0.00	-5.39	38.99
23	37	0.35	67.68	-19.13	-11.31	0.00	-10.23	0.00	27.01

RIGHT WHISTLE (0.00 + 28.85 + 0.00) = 28.85 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
37	61	0.35	67.68	-19.13	-9.48	0.00	-10.23	0.00	28.85

Segment Leq : 36.13 dBA

Total Leq All Segments: 36.13 dBA



Results segment # 1: VIA (night)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	9.35	9.42	101.32
0.50	9.35	9.21	101.11

LOCOMOTIVE (0.00 + 23.43 + 25.64) = 27.68 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
1	23	0.35	61.96	-19.13	-9.17	0.00	-10.23	0.00	23.43
1	23	0.00	61.96	-14.17	-9.13	0.00	0.00	-5.39	33.27
23	64	0.35	61.96	-19.13	-6.97	0.00	-10.23	0.00	25.64

WHEEL (0.00 + 15.01 + 17.07) = 19.17 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
1	23	0.45	55.04	-20.61	-9.18	0.00	-10.23	0.00	15.01
1	23	0.00	55.04	-14.17	-9.13	0.00	0.00	-5.70	26.04
23	64	0.45	55.04	-20.61	-7.12	0.00	-10.23	0.00	17.07

LEFT WHISTLE (0.00 + 24.38 + 22.24) = 26.45 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
1	23	0.35	62.91	-19.13	-9.17	0.00	-10.23	0.00	24.38
1	23	0.00	62.91	0.00	-9.13	0.00	0.00	-5.39	34.22
23	37	0.35	62.91	-19.13	-11.31	0.00	-10.23	0.00	22.24

RIGHT WHISTLE (0.00 + 24.08 + 0.00) = 24.08 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
37	61	0.35	62.91	-19.13	-9.48	0.00	-10.23	0.00	24.08

Segment Leq : 31.36 dBA

Total Leq All Segments: 31.36 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 36.13
(NIGHT): 31.36



STAMSON 5.0 NORMAL REPORT Date: 01-06-2011 19:37:39
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec27.te Time Period: Day/Night 16/8 hours
Description: GME11-033 - VIA RAIL NOISE - REC27

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

Train !Cont Type !weld	! Trains ! !(Left)	! Trains ! !(Right)	! Speed ! !(km/h)	!# loc ! !/Train!	!# Cars ! !/Train!	! Eng ! ! type
1. PASSANGER	6.0/1.0	6.0/1.0	150.0	1.0	4.0	!Diesel!

Data for Segment # 1: VIA (day/night)

Angle1 Angle2 : 1.00 deg 64.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 454.50 / 454.50 m
Receiver height : 9.35 / 9.35 m
Topography : 2 (Flat/gentle slope; with barrier)
Whistle Angle : 37 deg Track 1
Barrier angle1 : 1.00 deg Angle2 : 61.00 deg
Barrier height : 6.00 m
Barrier receiver distance : 139.80 / 139.80 m
Source elevation : 92.00 m
Receiver elevation : 92.34 m
Barrier elevation : 92.00 m
Reference angle : 0.00



Results segment # 1: VIA (day)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	9.35	7.94	99.94
0.50	9.35	6.86	98.86

LOCOMOTIVE (0.00 + 41.64 + 27.78) = 41.82 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
1	61	0.00	66.73	-14.81	-4.77	0.00	0.00	-4.09	43.06*
1	61	0.35	66.73	-19.99	-5.09	0.00	0.00	0.00	41.64
61	64	0.35	66.73	-19.99	-18.96	0.00	0.00	0.00	27.78

* Bright Zone !

WHEEL (0.00 + 33.07 + 18.95) = 33.24 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
1	61	0.09	59.81	-16.21	-4.86	0.00	0.00	-4.83	33.90*
1	61	0.45	59.81	-21.55	-5.19	0.00	0.00	0.00	33.07
61	64	0.45	59.81	-21.55	-19.31	0.00	0.00	0.00	18.95

* Bright Zone !

LEFT WHISTLE (0.00 + 40.59 + 0.00) = 40.59 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
1	37	0.00	67.68	-14.81	-6.99	0.00	0.00	-3.96	41.92*
1	37	0.35	67.68	-19.99	-7.10	0.00	0.00	0.00	40.59

* Bright Zone !

RIGHT WHISTLE (0.00 + 37.85 + 0.00) = 37.85 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
37	59	0.00	67.68	-14.81	-9.22	0.00	0.00	-4.27	39.38*
37	59	0.35	67.68	-19.99	-9.84	0.00	0.00	0.00	37.85

* Bright Zone !

Segment Leq : 45.42 dBA

Total Leq All Segments: 45.42 dBA

Results segment # 1: VIA (night)



Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	9.35	7.94	99.94
0.50	9.35	6.86	98.86

LOCOMOTIVE (0.00 + 36.87 + 23.01) = 37.05 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
1	61	0.00	61.96	-14.81	-4.77	0.00	0.00	-4.09	38.29*
1	61	0.35	61.96	-19.99	-5.09	0.00	0.00	0.00	36.87
61	64	0.35	61.96	-19.99	-18.96	0.00	0.00	0.00	23.01

* Bright Zone !

WHEEL (0.00 + 28.30 + 14.18) = 28.47 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
1	61	0.09	55.04	-16.21	-4.86	0.00	0.00	-4.83	29.13*
1	61	0.45	55.04	-21.55	-5.19	0.00	0.00	0.00	28.30
61	64	0.45	55.04	-21.55	-19.31	0.00	0.00	0.00	14.18

* Bright Zone !

LEFT WHISTLE (0.00 + 35.82 + 0.00) = 35.82 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
1	37	0.00	62.91	-14.81	-6.99	0.00	0.00	-3.96	37.15*
1	37	0.35	62.91	-19.99	-7.10	0.00	0.00	0.00	35.82

* Bright Zone !

RIGHT WHISTLE (0.00 + 33.08 + 0.00) = 33.08 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
37	59	0.00	62.91	-14.81	-9.22	0.00	0.00	-4.27	34.60*
37	59	0.35	62.91	-19.99	-9.84	0.00	0.00	0.00	33.08

* Bright Zone !

Segment Leq : 40.65 dBA

Total Leq All Segments: 40.65 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 45.42

(NIGHT): 40.65

STAMSON 5.0 NORMAL REPORT Date: 01-06-2011 19:38:00

MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec28.te

Time Period: Day/Night 16/8 hours



Description: GME11-033 - VIA RAIL NOISE - REC28

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

Train !Cont Type !weld	! Trains ! !(Left)	! Trains ! !(Right)	! Speed ! !(km/h)	!# loc ! !/Train!	!# Cars ! !/Train!	! Eng ! ! type
1. PASSANGER	6.0/1.0	6.0/1.0	150.0	1.0	4.0	Diesel!

Data for Segment # 1: VIA (day/night)

Angle1 Angle2 : -55.00 deg 65.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 398.30 / 398.30 m
Receiver height : 9.35 / 9.35 m
Topography : 2 (Flat/gentle slope; with barrier)
Whistle Angle : 37 deg Track 1
Barrier angle1 : -55.00 deg Angle2 : 65.00 deg
Barrier height : 10.00 m
Barrier receiver distance : 30.00 / 30.00 m
Source elevation : 92.00 m
Receiver elevation : 92.35 m
Barrier elevation : 91.90 m
Reference angle : 0.00



Results segment # 1: VIA (day)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	9.35	9.37	101.27
0.50	9.35	9.11	101.01

LOCOMOTIVE (0.00 + 45.42 + 0.00) = 45.42 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-55	65	0.00	66.73	-14.24	-1.76	0.00	0.00	-5.30	45.42

WHEEL (0.00 + 38.21 + 0.00) = 38.21 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-55	65	0.00	59.81	-14.24	-1.76	0.00	0.00	-5.60	38.21

LEFT WHISTLE (0.00 + 42.62 + 0.00) = 42.62 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-14	37	0.00	67.68	-14.24	-5.47	0.00	0.00	-5.35	42.62

RIGHT WHISTLE (0.00 + 39.33 + 0.00) = 39.33 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
37	60	0.00	67.68	-14.24	-8.87	0.00	0.00	-5.24	39.33

Segment Leq : 48.34 dBA

Total Leq All Segments: 48.34 dBA



Results segment # 1: VIA (night)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	9.35	9.37	101.27
0.50	9.35	9.11	101.01

LOCOMOTIVE (0.00 + 40.65 + 0.00) = 40.65 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-55	65	0.00	61.96	-14.24	-1.76	0.00	0.00	-5.30	40.65

WHEEL (0.00 + 33.44 + 0.00) = 33.44 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-55	65	0.00	55.04	-14.24	-1.76	0.00	0.00	-5.60	33.44

LEFT WHISTLE (0.00 + 37.85 + 0.00) = 37.85 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-14	37	0.00	62.91	-14.24	-5.47	0.00	0.00	-5.35	37.85

RIGHT WHISTLE (0.00 + 34.56 + 0.00) = 34.56 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
37	60	0.00	62.91	-14.24	-8.87	0.00	0.00	-5.24	34.56

Segment Leq : 43.57 dBA

Total Leq All Segments: 43.57 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 48.34
(NIGHT): 43.57



STAMSON 5.0 NORMAL REPORT Date: 01-06-2011 19:38:22
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec32.te Time Period: Day/Night 16/8 hours
Description: GME11-033 - VIA RAIL NOISE - REC32

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

Train !Cont Type !weld	! Trains ! !(Left)	! Trains ! !(Right)	! Speed ! !(km/h)	!# loc ! !/Train!	!# Cars ! !/Train!	! Eng ! ! type
1. PASSANGER	6.0/1.0	6.0/1.0	150.0	1.0	4.0	!Diesel!

No

Data for Segment # 1: VIA (day/night)

Angle1 Angle2 : -53.00 deg 68.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 379.80 / 379.80 m
Receiver height : 6.82 / 6.82 m
Topography : 2 (Flat/gentle slope; with barrier)
Whistle Angle : 37 deg Track 1
Barrier angle1 : -53.00 deg Angle2 : 39.00 deg
Barrier height : 10.00 m
Barrier receiver distance : 12.60 / 12.60 m
Source elevation : 92.00 m
Receiver elevation : 92.54 m
Barrier elevation : 92.24 m
Reference angle : 0.00



Results segment # 1: VIA (day)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	6.82	7.01	99.25
0.50	6.82	6.89	99.13

LOCOMOTIVE (0.00 + 36.98 + 37.79) = 40.42 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-53	39	0.00	66.73	-14.03	-2.91	0.00	0.00	-12.80	36.98
39	68	0.43	66.73	-20.00	-8.93	0.00	0.00	0.00	37.79

WHEEL (0.00 + 29.75 + 29.16) = 32.47 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-53	39	0.00	59.81	-14.03	-2.91	0.00	0.00	-13.11	29.75
39	68	0.53	59.81	-21.48	-9.17	0.00	0.00	0.00	29.16

LEFT WHISTLE (0.00 + 35.29 + 0.00) = 35.29 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-17	37	0.00	67.68	-14.03	-5.25	0.00	0.00	-13.10	35.29

RIGHT WHISTLE (0.00 + 21.73 + 37.72) = 37.83 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
37	39	0.00	67.68	-14.03	-19.54	0.00	0.00	-12.37	21.73
39	61	0.43	67.68	-20.00	-9.96	0.00	0.00	0.00	37.72

Segment Leq : 43.47 dBA

Total Leq All Segments: 43.47 dBA



Results segment # 1: VIA (night)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	6.82	7.01	99.25
0.50	6.82	6.89	99.13

LOCOMOTIVE (0.00 + 32.21 + 33.02) = 35.65 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-53	39	0.00	61.96	-14.03	-2.91	0.00	0.00	-12.80	32.21
39	68	0.43	61.96	-20.00	-8.93	0.00	0.00	0.00	33.02

WHEEL (0.00 + 24.98 + 24.39) = 27.70 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-53	39	0.00	55.04	-14.03	-2.91	0.00	0.00	-13.11	24.98
39	68	0.53	55.04	-21.48	-9.17	0.00	0.00	0.00	24.39

LEFT WHISTLE (0.00 + 30.52 + 0.00) = 30.52 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-17	37	0.00	62.91	-14.03	-5.25	0.00	0.00	-13.10	30.52

RIGHT WHISTLE (0.00 + 16.96 + 32.95) = 33.05 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
37	39	0.00	62.91	-14.03	-19.54	0.00	0.00	-12.37	16.96
39	61	0.43	62.91	-20.00	-9.96	0.00	0.00	0.00	32.95

Segment Leq : 38.70 dBA

Total Leq All Segments: 38.70 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 43.47
(NIGHT): 38.70



STAMSON 5.0 NORMAL REPORT Date: 01-06-2011 19:38:37
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec34.te Time Period: Day/Night 16/8 hours
Description: GME11-033 - VIA RAIL NOISE - REC34

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

Train !Cont Type !weld	! Trains ! !(Left)	! Trains ! !(Right)	! Speed ! !(km/h)	!# loc ! !/Train!	!# Cars ! !/Train!	! Eng ! ! type
1. PASSANGER	6.0/1.0	6.0/1.0	150.0	1.0	4.0	!Diesel!

Data for Segment # 1: VIA (day/night)

Angle1 Angle2 : -49.00 deg 66.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 419.70 / 419.70 m
Receiver height : 6.82 / 6.82 m
Topography : 2 (Flat/gentle slope; with barrier)
Whistle Angle : 37 deg Track 1
Barrier angle1 : -10.00 deg Angle2 : 60.00 deg
Barrier height : 15.00 m
Barrier receiver distance : 27.20 / 27.20 m
Source elevation : 92.00 m
Receiver elevation : 92.65 m
Barrier elevation : 92.59 m
Reference angle : 0.00



Results segment # 1: VIA (day)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	6.82	6.66	99.25
0.50	6.82	6.43	99.02

LOCOMOTIVE (39.17 + 30.12 + 29.87) = 40.11 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-49	-10	0.43	66.73	-20.62	-6.94	0.00	0.00	0.00	39.17
-10	60	0.00	66.73	-14.47	-4.10	0.00	0.00	-18.04	30.12
60	66	0.43	66.73	-20.62	-16.23	0.00	0.00	0.00	29.87

WHEEL (30.65 + 22.96 + 21.07) = 31.72 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-49	-10	0.53	59.81	-22.14	-7.01	0.00	0.00	0.00	30.65
-10	60	0.00	59.81	-14.47	-4.10	0.00	0.00	-18.28	22.96
60	66	0.53	59.81	-22.14	-16.59	0.00	0.00	0.00	21.07

LEFT WHISTLE (25.55 + 28.73 + 0.00) = 30.44 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-11	-10	0.43	67.68	-20.62	-21.50	0.00	0.00	0.00	25.55
-10	37	0.00	67.68	-14.47	-5.83	0.00	0.00	-18.65	28.73

RIGHT WHISTLE (0.00 + 27.17 + 0.00) = 27.17 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
37	60	0.00	67.68	-14.47	-9.01	0.00	0.00	-17.04	27.17

Segment Leq : 41.26 dBA

Total Leq All Segments: 41.26 dBA



Results segment # 1: VIA (night)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	6.82	6.66	99.25
0.50	6.82	6.43	99.02

LOCOMOTIVE (34.39 + 25.35 + 25.10) = 35.34 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-49	-10	0.43	61.96	-20.62	-6.94	0.00	0.00	0.00	34.39
-10	60	0.00	61.96	-14.47	-4.10	0.00	0.00	-18.04	25.35
60	66	0.43	61.96	-20.62	-16.23	0.00	0.00	0.00	25.10

WHEEL (25.88 + 18.19 + 16.30) = 26.95 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-49	-10	0.53	55.04	-22.14	-7.01	0.00	0.00	0.00	25.88
-10	60	0.00	55.04	-14.47	-4.10	0.00	0.00	-18.28	18.19
60	66	0.53	55.04	-22.14	-16.59	0.00	0.00	0.00	16.30

LEFT WHISTLE (20.78 + 23.96 + 0.00) = 25.67 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-11	-10	0.43	62.91	-20.62	-21.50	0.00	0.00	0.00	20.78
-10	37	0.00	62.91	-14.47	-5.83	0.00	0.00	-18.65	23.96

RIGHT WHISTLE (0.00 + 22.40 + 0.00) = 22.40 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
37	60	0.00	62.91	-14.47	-9.01	0.00	0.00	-17.04	22.40

Segment Leq : 36.49 dBA

Total Leq All Segments: 36.49 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 41.26
(NIGHT): 36.49



STAMSON 5.0 NORMAL REPORT Date: 01-06-2011 19:39:03
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec38.te Time Period: Day/Night 16/8 hours
Description: GME11-033 - VIA RAIL NOISE - REC38

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

```
-----  
Train                    ! Trains                    ! Trains                    ! Speed !# loc !# Cars! Eng  
!Cont  
Type                    ! (Left)                    ! (Right)                    !(km/h) !/Train!/Train! type  
!weld  
-----+-----+-----+-----+-----+-----+-----+  
---  
1. PASSANGER            !    6.0/1.0            !    6.0/1.0            ! 150.0 !    1.0 !    4.0 !Diesel!  
No
```

Data for Segment # 1: VIA (day/night)

```
-----  
Angle1    Angle2                    : -51.00 deg    -25.00 deg  
Wood depth                    :            0                    (No woods.)  
No of house rows                :            0 / 0  
Surface                        :            1                    (Absorptive ground surface)  
Receiver source distance        : 386.60 / 386.60 m  
Receiver height                 :    6.82 / 6.82    m  
Topography                     :            2                    (Flat/gentle slope; with barrier)  
Whistle Angle                  :            37 deg    Track 1  
Barrier angle1                 : -51.00 deg    Angle2 : -25.00 deg  
Barrier height                 :            7.00 m  
Barrier receiver distance       : 35.27 / 35.27    m  
Source elevation                :            92.00 m  
Receiver elevation              :            92.59 m  
Barrier elevation               :            92.00 m  
Reference angle                 :            0.00
```



Rail data, segment # 2: VIA2 (day/night)

Train !Cont Type !weld	! Trains ! !(Left)	! Trains ! !(Right)	! Speed ! !(km/h)	!# loc ! !/Train!	!# Cars ! !/Train!	Eng ! type
1. PASSENGER	6.0/1.0	6.0/1.0	150.0	1.0	4.0	Diesel!

Data for Segment # 2: VIA2 (day/night)

Angle1 Angle2 : -25.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 386.60 / 386.60 m
Receiver height : 6.82 / 6.82 m
Topography : 4 (Elevated; with barrier)
Whistle Angle : 37 deg Track 1
Barrier angle1 : -25.00 deg Angle2 : 0.00 deg
Barrier height : 10.00 m
Elevation : 0.00 m
Barrier receiver distance : 20.21 / 20.21 m
Source elevation : 92.00 m
Receiver elevation : 92.59 m
Barrier elevation : 92.75 m
Reference angle : 0.00



Results segment # 1: VIA (day)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	6.82	7.10	99.10
0.50	6.82	6.78	98.78

LOCOMOTIVE (0.00 + 37.75 + 0.00) = 37.75 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-51	-25	0.01	66.73	-14.19	-8.41	0.00	0.00	-4.99	39.14*
-51	-25	0.43	66.73	-20.11	-8.86	0.00	0.00	0.00	37.75

* Bright Zone !

WHEEL (0.00 + 30.58 + 0.00) = 30.58 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-51	-25	0.11	59.81	-15.67	-8.52	0.00	0.00	-5.03	30.58

LEFT WHISTLE (20.78 + 23.96 + 0.00) = 0.00 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-16	-16	0.00	67.68	0.00	-21.50	0.00	0.00	0.00	20.78
-16	-25	0.00	67.68	0.00	-5.83	0.00	0.00	0.00	23.96

Segment Leq : 38.51 dBA



Results segment # 2: VIA2 (day)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	6.82	6.48	99.23
0.50	6.82	6.30	99.05

LOCOMOTIVE (0.00 + 31.34 + 0.00) = 31.34 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-25	0	0.00	66.73	-14.11	-8.57	0.00	0.00	-12.70	31.34

WHEEL (0.00 + 24.01 + 0.00) = 24.01 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-25	0	0.00	59.81	-14.11	-8.57	0.00	0.00	-13.11	24.01

LEFT WHISTLE (0.00 + 30.19 + 0.00) = 30.19 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-16	0	0.00	67.68	0.00	-10.59	0.00	0.00	-12.78	30.19

Segment Leq : 34.25 dBA

Total Leq All Segments: 39.89 dBA



Results segment # 1: VIA (night)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	6.82	7.10	99.10
0.50	6.82	6.78	98.78

LOCOMOTIVE (0.00 + 32.98 + 0.00) = 32.98 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-51	-25	0.01	61.96	-14.19	-8.41	0.00	0.00	-4.99	34.37*
-51	-25	0.43	61.96	-20.11	-8.86	0.00	0.00	0.00	32.98

* Bright Zone !

WHEEL (0.00 + 25.81 + 0.00) = 25.81 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-51	-25	0.11	55.04	-15.67	-8.52	0.00	0.00	-5.03	25.81

LEFT WHISTLE (0.00 + 30.19 + 0.00) = 0.00 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-16	-25	0.00	62.91	0.00	-10.59	0.00	0.00	0.00	30.19

Segment Leq : 33.74 dBA



Results segment # 2: VIA2 (night)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	6.82	6.48	99.23
0.50	6.82	6.30	99.05

LOCOMOTIVE (0.00 + 26.57 + 0.00) = 26.57 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-25	0	0.00	61.96	-14.11	-8.57	0.00	0.00	-12.70	26.57

WHEEL (0.00 + 19.24 + 0.00) = 19.24 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-25	0	0.00	55.04	-14.11	-8.57	0.00	0.00	-13.11	19.24

LEFT WHISTLE (0.00 + 25.42 + 0.00) = 25.42 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-16	0	0.00	62.91	0.00	-10.59	0.00	0.00	-12.78	25.42

Segment Leq : 29.48 dBA

Total Leq All Segments: 35.12 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 39.89
(NIGHT): 35.12



STAMSON 5.0 NORMAL REPORT Date: 01-06-2011 19:39:24
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec39.te Time Period: Day/Night 16/8 hours
Description: GME11-033 - VIA RAIL NOISE - REC39

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

Train !Cont Type !weld	! Trains ! !(Left)	! Trains ! !(Right)	! Speed ! !(km/h)	!# loc ! !/Train!	!# Cars ! !/Train!	! Eng ! ! type
1. PASSANGER	6.0/1.0	6.0/1.0	150.0	1.0	4.0	!Diesel!

Data for Segment # 1: VIA (day/night)

Angle1 Angle2 : -44.00 deg -7.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 494.20 / 494.20 m
Receiver height : 6.82 / 6.82 m
Topography : 2 (Flat/gentle slope; with barrier)
Whistle Angle : 37 deg Track 1
Barrier angle1 : -44.00 deg Angle2 : -7.00 deg
Barrier height : 7.00 m
Barrier receiver distance : 139.60 / 139.60 m
Source elevation : 92.00 m
Receiver elevation : 92.77 m
Barrier elevation : 92.00 m
Reference angle : 0.00



Rail data, segment # 2: VIA2 (day/night)

```
-----  
Train          ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  
!Cont  
Type           ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type  
!weld  
-----+-----+-----+-----+-----+-----+-----+  
---  
  1. PASSENGER !   6.0/1.0   !   6.0/1.0   ! 150.0 !  1.0 !  4.0 !Diesel!  
No
```

Data for Segment # 2: VIA2 (day/night)

```
-----  
Angle1  Angle2      :  -7.00 deg  0.00 deg  
Wood depth      :      0      (No woods.)  
No of house rows :      0 / 0  
Surface         :      1      (Absorptive ground surface)  
Receiver source distance : 386.60 / 386.60 m  
Receiver height  :    6.82 / 6.82 m  
Topography      :      2      (Flat/gentle slope; with barrier)  
Whistle Angle   :    37 deg  Track 1  
Barrier angle1   :  -7.00 deg  Angle2 : -2.00 deg  
Barrier height   :   10.00 m  
Barrier receiver distance : 127.90 / 127.90 m  
Source elevation :   92.00 m  
Receiver elevation :   92.77 m  
Barrier elevation :   92.75 m  
Reference angle  :    0.00
```



Results segment # 1: VIA (day)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	6.82	6.58	98.58
0.50	6.82	5.59	97.59

LOCOMOTIVE (0.00 + 39.55 + 0.00) = 39.55 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-44	-7	0.01	66.73	-15.26	-6.87	0.00	0.00	-5.04	39.55

WHEEL (0.00 + 30.57 + 0.00) = 30.57 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-44	-7	0.11	59.81	-16.85	-6.93	0.00	0.00	-5.45	30.57

LEFT WHISTLE (0.00 + 25.42 + 0.00) = 0.00 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-3	-7	0.00	67.68	0.00	-10.59	0.00	0.00	0.00	25.42

Segment Leq : 40.07 dBA



Results segment # 2: VIA2 (day)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	6.82	5.65	98.40
0.50	6.82	4.49	97.24

LOCOMOTIVE (0.00 + 27.99 + 27.07) = 30.57 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-7	-2	0.00	66.73	-14.11	-15.56	0.00	0.00	-9.06	27.99
-2	0	0.43	66.73	-20.11	-19.54	0.00	0.00	0.00	27.07

WHEEL (0.00 + 19.56 + 18.67) = 22.15 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-7	-2	0.00	59.81	-14.11	-15.56	0.00	0.00	-10.57	19.56
-2	0	0.53	59.81	-21.60	-19.54	0.00	0.00	0.00	18.67

LEFT WHISTLE (0.00 + 28.95 + 28.02) = 31.52 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-7	-2	0.00	67.68	0.00	-15.56	0.00	0.00	-9.06	28.95
-2	0	0.00	67.68	0.00	-19.54	0.00	0.00	0.00	28.02

Segment Leq : 34.35 dBA

Total Leq All Segments: 41.10 dBA



Results segment # 1: VIA (night)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	6.82	6.58	98.58
0.50	6.82	5.59	97.59

LOCOMOTIVE (0.00 + 34.78 + 0.00) = 34.78 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-44	-7	0.01	61.96	-15.26	-6.87	0.00	0.00	-5.04	34.78

WHEEL (0.00 + 25.80 + 0.00) = 25.80 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-44	-7	0.11	55.04	-16.85	-6.93	0.00	0.00	-5.45	25.80

LEFT WHISTLE (0.00 + 28.95 + 28.02) = 0.00 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-3	-7	0.00	62.91	0.00	-15.56	0.00	0.00	0.00	28.95
-7	-7	0.00	62.91	0.00	-19.54	0.00	0.00	0.00	28.02

Segment Leq : 35.30 dBA



Results segment # 2: VIA2 (night)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	6.82	5.65	98.40
0.50	6.82	4.49	97.24

LOCOMOTIVE (0.00 + 23.22 + 22.30) = 25.80 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-7	-2	0.00	61.96	-14.11	-15.56	0.00	0.00	-9.06	23.22
-2	0	0.43	61.96	-20.11	-19.54	0.00	0.00	0.00	22.30

WHEEL (0.00 + 14.79 + 13.90) = 17.38 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-7	-2	0.00	55.04	-14.11	-15.56	0.00	0.00	-10.57	14.79
-2	0	0.53	55.04	-21.60	-19.54	0.00	0.00	0.00	13.90

LEFT WHISTLE (0.00 + 24.17 + 23.25) = 26.75 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-7	-2	0.00	62.91	0.00	-15.56	0.00	0.00	-9.06	24.17
-2	0	0.00	62.91	0.00	-19.54	0.00	0.00	0.00	23.25

Segment Leq : 29.58 dBA

Total Leq All Segments: 36.33 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 41.10
(NIGHT): 36.33