NORTHGATE AND ERBSVILLE KARTWAY SUBDIVISIONS
BEAVER CREEK MEADOWS DISTRICT, WATERLOO

Preliminary

Environmental Noise Assessment

Project Location:
East of Erbsville Road
West of Beaver Creek Road
South of Conservation Drive
Waterloo, Ontario

Prepared for:
1017081 Ontario Limited and Gabriella Elizabeth Groff (Northgate Subdivision)
1455136 Ontario Inc. (Erbsville Kartway Subdivision)
c/o Mr. Paul Grespan
675 Riverbend Drive
Kitchener, ON N2K 3S3

Prepared by:
MTE Consultants Inc.
520 Bingemans Centre Drive
Kitchener, ON N2B 3X9

July 5, 2017

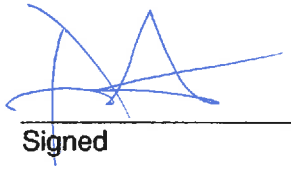
MTE File No.: 39502-104



STATEMENT

- I am the owner of the property, or the owner's agent, and I understand and agree with the noise attenuation measures proposed in this study entitled Preliminary Environmental Noise Assessment, Northgate & Erbsville Kartway Subdivisions, Beaver Creek Meadows District, Part of Lot 28, German Company Tract (Geographic Township of Waterloo), Regional Municipality of Waterloo.
- The application has been designed to avoid the use of berms or walls as noise attenuation features where feasible. Where berms or walls are recommended, the Noise Study provides economic, planning and engineering justification.
- If the application is changed in a way that may affect the noise level calculations, I will have a revised noise study submitted to the Region.

Northgate Subdivision



Signed

July 5/17

Dated

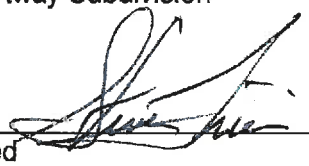
David Acton

Please Print

Agent for Owners

Title

Erbsville Kartway Subdivision



Signed

July 5 2017

Dated

STEVEN FRIES

Please Print

PRESIDENT

Title

TABLE OF CONTENTS

Page

1.0 INTRODUCTION 1

2.0 CRITERIA 3

2.1 Noise Levels for Outdoor Recreation Areas 3
2.2 Indoor Noise Level Limits 3
2.3 Calculation Parameters 4

3.0 ANALYSIS PROCEDURES 5

3.1 Road Traffic Data 5
3.2 Calculation Methods 5

4.0 ANALYSIS 7

4.1 Noise Level Calculations 7
4.2 Noise Attenuation Barrier 7
4.3 Noise Warning Clauses 9

5.0 CONCLUSIONS AND RECOMMENDATIONS 10

FIGURES

FIGURE 1.0 - LOCATION PLAN 2

TABLES

TABLE 1 - REQUIRED NOISE CONTROL MEASURES FOR OUTDOOR LIVING AREAS 3
TABLE 2 - REQUIRED NOISE CONTROL MEASURES FOR INDOOR LIVING AREAS 4
TABLE 3 - ULTIMATED 2035 ROAD TRAFFIC VOLUMES FOR CONSERVATION DRIVE (BETWEEN BEAVER CREEK ROAD AND CREEKSIDE CHURCH) 6
TABLE 4 - ULTIMATE 2035 ROAD TRAFFIC VOLUMES FOR CONSERVATION DRIVE (WEST OF CREEKSIDE CHURCH AND ERBSVILLE ROAD) 6
TABLE 5 - ULTIMATE 2035 ROAD TRAFFIC VOLUMES FOR BEAVER CREEK ROAD (BETWEEN CONSERVATION DRIVE AND GREEN ACRES PARK LN) 6
TABLE 6 - ULTIMATE 2035 ROAD TRAFFIC VOLUMES FOR BEAVER CREEK ROAD (SOUTH OF GREEN ACRES PARK LN) 6
TABLE 7 - ULTIMATE 2035 ROAD TRAFFIC VOLUMES FOR ERBSVILLE ROAD (SOUTH OF CONSERVATION DRIVE) 6
TABLE 8 - ROAD TRAFFIC NOISE LEVELS 8

DRAWINGS

MTE Drawing No. 39502-104-NA1.1 ..... Encl.

APPENDICES

APPENDIX A STATUTORY DECLARATION
APPENDIX B ROAD TRAFFIC DATA
APPENDIX C STAMSON NOISE CALCULATIONS

1.0 INTRODUCTION

MTE Consultants Inc. was retained by Mr. Brian Groff, on behalf of 1017081 Ontario Limited and Gabriella Elizabeth Groff (Northgate Subdivision) and Mr. Steve Fries on behalf of 1455136 Ontario Inc. (Erbsville Kartway Subdivision), to complete a Preliminary Environmental Noise Assessment Report in support of draft plan approval of the proposed Northgate and Erbsville Kartway Subdivisions in the City of Waterloo, Ontario. The site is legally described as Part of Lot 28, German Company Tract, City of Waterloo. The Northgate Subdivision (49.290 ha) and the Erbsville Kartway Subdivision (6.424 ha) encompass approximately 55.714 ha of lands within the City of Waterloo, within the Regional Municipality of Waterloo. Note that the Northgate Subdivision (49.290 ha) consists of 33.159 ha of land included within the limits of the proposed subdivision and 16.131 ha of land along Beaver Creek located outside the subdivision limits to be retained as open space condition.

The subject lands are part of Beaver Creek Meadows District, which abut the intersection of Beaver Creek Road and Conservation Drive, East of Erbsville Road and being 550m south of the municipal boundary between the City of Waterloo and the Township of Woolwich.

The location of the subject lands is illustrated in Figure 1.0, along with the general extent of the Beaver Creek Meadows District. They are surrounded by the Laurel Creek Conservation Area, Reservoir, and Nature Centre to the southeast, Creekside Church to the northwest, residential subdivisions to the east and south, and agricultural fields and rural homes to the north and west.

A Draft Plan of Subdivision for the proposed development has been prepared by MHBC Planning (dated July 4, 2017). The Draft Plan has been designed in an iterative fashion with input from the project team and forms the basis for the Preliminary Environmental Noise Assessment. The Draft Plans of Subdivision include single family residential blocks, multiple residential blocks, stormwater management blocks, sanitary pumping station blocks, park blocks, open space blocks, walkways, emergency access and service corridor blocks, and municipal right-of-ways.

The purpose of this study is to determine the noise impact from Conservation Drive, Beaver Creek Road and Erbsville Road on the subject land, and recommend noise control measures to meet the Ministry of the Environment's guidelines while satisfying the planning requirements of the City of Waterloo and the Regional Municipality of Waterloo.

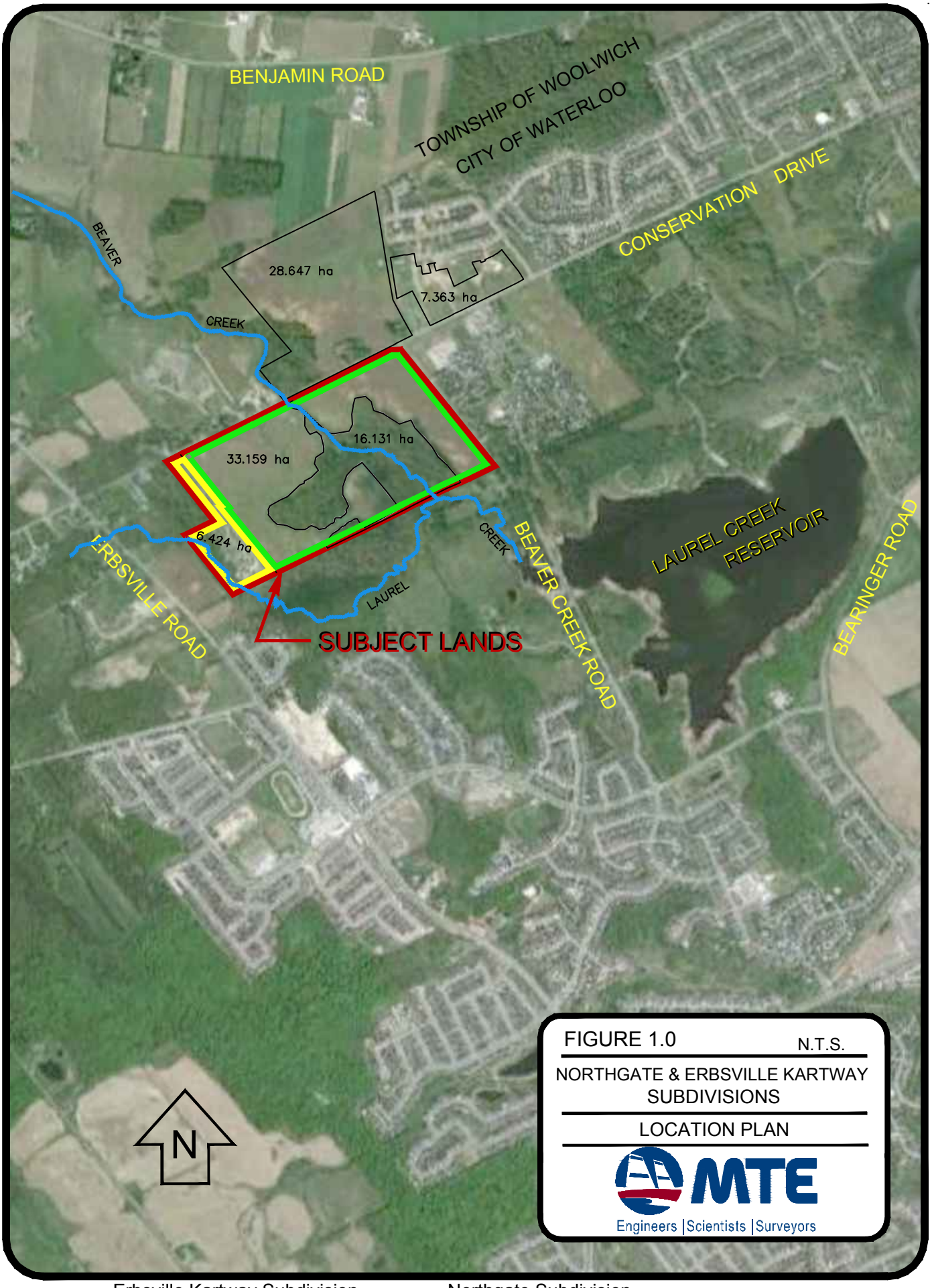


FIGURE 1.0 N.T.S.

NORTHGATE & ERBSVILLE KARTWAY SUBDIVISIONS

LOCATION PLAN

MTE Engineers | Scientists | Surveyors

Erbsville Kartway Subdivision Northgate Subdivision

CAD: P:\P\39502\104\39502-104-F21_LOCATION Project: 39502-104

July 5, 2017 - 8:42 a.m. - Plotted By: ccarre

2.0 CRITERIA

This report and analysis have been completed using the requirements of the Ministry of the Environment's (MOE's) Publication NPC-300*: Environmental Noise Guideline: Stationary and Transportation Sources – Approval and Planning (2013)* and the Regional Municipality of Waterloo's implementation guideline for Noise Policy (updated July, 1999).

2.1 Noise Levels for Outdoor Recreation Areas

The recommended outdoor day-time noise levels, taken from Table C-1 in the Publication NPC-300 are:

Usage	Between Hours	Road Noise Levels
Outdoor Living Area	07:00 to 23:00	55 dBA L_{eq}

Table 1 summarizes the noise control measures required for various conditions.

TABLE 1 - REQUIRED NOISE CONTROL MEASURES FOR OUTDOOR LIVING AREAS

Day-time (07:00-23:00)	Exceeds Objective By	Noise Control Measures
55 dBA or less	0 dBA	No requirements or conditions
56-60 dBA	1-5 dBA	Noise Warning Clause
61+ dBA	6+ dBA	Alternative Land Use Alternative Draft Plan Designs Barriers

2.2 Indoor Noise Level Limits

Similar to outdoor noise levels limits, the recommended indoor noise levels are given in Table C-2 in the Publication NPC-300:

Usage	Between Hours	Noise Levels (L_{eq}) Road
Indoor Living Area	07:00 to 23:00	45 dBA
Indoor Living Area (Sleeping Quarters)	23:00 to 07:00	40 dBA

Outdoor sound levels (calculated at the plane of the bedroom window for night-time hours and at the plane of the living room window for day-time hours) are used to determine if acoustical mitigation measures are required. Table 2 summarizes the noise control measures required for indoor living areas under various conditions:

TABLE 2 - REQUIRED NOISE CONTROL MEASURES FOR INDOOR LIVING AREAS

Day-time (07:00-23:00)	Night-time (23:00-07:00)	Exceeds Objective By	Noise Control Measures
45 dBA or less	40 dBA or less	0 dBA	No requirements or conditions
46-55 dBA	41-50 dBA	1-10 dBA	Noise Warning Clause Provisions for air conditioning
56+ dBA	51+ dBA	10+ dBA	Central A/C or other ventilation system installed prior to occupancy Possible need for acoustic treatment of building components

2.3 Calculation Parameters

As noted above, the allowable outdoor noise level is 55 dBA with up to 60 dBA being allowed with a noise warning clause. The allowable indoor day-time (07:00 - 23:00) and night-time (23:00-07:00) noise levels are 45 dBA and 40 dBA respectively, using the road traffic criteria. Indoor noise levels are 10 dBA less than outdoor noise levels for buildings with standard wall construction. Therefore, it can be concluded that when acceptable outdoor noise levels are achieved, the indoor daytime noise levels are also acceptable. For example, if the outdoor noise level is 60 dBA, then the indoor noise level equals 50 dBA. This would be acceptable with a noise warning clause and provisions for central air conditioning. Day-time and night-time noise calculations for indoor noise levels at locations which represent the worst-case impact from road noise have been included. The calculations have been completed for the ground and second floor, at elevations 1.5m and 4.5m, respectively, above ground level at the building face closest to the noise source. Noise levels have also been calculated for the outdoor recreation area at a height of 1.5m above ground level. Calculations were completed for house Setback lines 1, 2 and 3 for the road traffic as shown on MTE Drawing 39502-104-NA1.1.

3.0 ANALYSIS PROCEDURES

3.1 Road Traffic Data

The noise sources considered in this analysis include:

- Conservation Drive
- Beaver Creek Road
- Erbsville Road

Future traffic conditions (2035 Ultimate Forecast Traffic Volumes) for Conservation Drive, Beaver Creek Road and Erbsville Road were documented by Stantec in the Beaver Creek Road and Conservation Drive Upgrades and Extension of Municipal Services Class Environmental Assessment Report, Appendix F (December 14, 2015).

Modeling for the points of assessment A2, B2, C2, D2, A3, B3, C3, D3, E3, F3 and G3 were obtained by the combination of the traffic volumes from Conservation Drive and Beaver Creek Road (segment 1 and 2). Modeling for the points of assessment H2, I2, J2, K2, H3, I3, J3, K3 and L3 were obtained by the combination of the traffic volumes from Conservation Drive and Erbsville Road.

The traffic volumes for Conservation Drive, Beaver Creek Road and Erbsville Road summarized in Tables 3 through 7 respectively. See Appendix B for transportation data.

Road grades for Conservation Drive were calculated using the information provided by Stantec as part of the Beaver Creek Road and Conservation Drive Upgrades. Based on this information we are assuming that Conservation Road has grades ranging between 1.4-4.4% and Beaver Creek Road has grades ranging between 0-2.2%. Existing road grades for Erbsville Road were calculated using Region of Waterloo contour data. Erbsville Road has grades ranging between 0-1.5%. These road gradients were used in Stamson Modeling.

3.2 Calculation Methods

Road noise levels were calculated using Stamson v5.03 computer program from the MOE. Day-time and night-time road noise levels were calculated based on 24 hour traffic volumes (AADT). The day-time volume is obtained by multiplying the average daily volume by the fraction of daily traffic expected during the 16- hour day-time period (90% for Conservation Drive, Beaver Creek Road and Erbsville Road). The night-time hourly volumes are obtained in a similar manner over 8 hours (except using 10% for expected night-time traffic). Noise calculations are attached in Appendix C.

TABLE 3 - ULTIMATED 2035 ROAD TRAFFIC VOLUMES FOR CONSERVATION DRIVE (BETWEEN BEAVER CREEK ROAD AND CREEKSIDE CHURCH)

Conservation-Drive (between Beaver Creek Road and Creekside Church)	Ultimate 2035 AADT – 13,280 vpd Speed Limit = 50 km/h		
	Cars	Medium Trucks (1.8%)	Heavy Trucks (0.7%)
Day-time Volume (16-hours)	11,653	215	84
Night-time Volume (8-hours)	1,295	24	9

Table 4 - ULTIMATE 2035 ROAD TRAFFIC VOLUMES FOR CONSERVATION DRIVE (WEST OF CREEKSIDE CHURCH AND ERBSVILLE ROAD)

Conservation Drive (west of Creekside Church)	Ultimate 2035 AADT – 10,140 vpd Speed Limit = 50 km/h		
	Cars	Medium Trucks (1.8%)	Heavy Trucks (0.7%)
Day-time Volume (16-hours)	8,898	164	64
Night-time Volume (8-hours)	989	18	7

TABLE 5 - ULTIMATE 2035 ROAD TRAFFIC VOLUMES FOR BEAVER CREEK ROAD (BETWEEN CONSERVATION DRIVE AND GREEN ACRES PARK LN)

Beaver Creek Road (between Conservation Drive and Green Acres Park Ln)	Ultimate 2035 AADT – AADT – 6,250 vpd Speed Limit = 60 km/h		
	Cars	Medium Trucks (0.5%)	Heavy Trucks (0.2%)
Day-time Volume (16-hours)	5,586	28	11
Night-time Volume (8-hours)	621	3	1

TABLE 6 - ULTIMATE 2035 ROAD TRAFFIC VOLUMES FOR BEAVER CREEK ROAD (SOUTH OF GREEN ACRES PARK LN)

Beaver Creek Road (south of Green Acres Park Ln)	Ultimate 2035 AADT – 6,750vpd Speed Limit = 60 km/h		
	Cars	Medium Trucks (0.5%)	Heavy Trucks (0.2%)
Day-time Volume (16-hours)	6,033	31	12
Night-time Volume (8-hours)	670	3	1

TABLE 7 - ULTIMATE 2035 ROAD TRAFFIC VOLUMES FOR ERBSVILLE ROAD (SOUTH OF CONSERVATION DRIVE)

Erbsville Road (south of Conservation Drive)	Ultimate 2035 AADT – 9,790 vpd Speed Limit = 50 km/h		
	Cars	Medium Trucks (3.3%)	Heavy Trucks (5.2%)
Day-time Volume (16-hours)	8,062	291	458
Night-time Volume (8-hours)	896	32	51

4.0 ANALYSIS

4.1 Noise Level Calculations

This noise report has been completed to assess the traffic noise impacts of Conservation Drive, Beaver Creek Road and Erbsville Road on the future residential units within proposed Northgate and Erbsville Kartway developments. Noise calculations were completed to determine the minimum source-receiver distance to achieve adequate noise attenuation:

- With central A/C, special building components, and a warning clause (Setback Line 1).
- With provisions for central A/C, control measures for outdoor living areas (OLA's) and a noise warning clause (Setback line 2).
- With a noise warning clause (Setback line 3).

The free-field Setbacks 1, 2 & 3 for daytime levels of 65dBA, 60dBA and 55dBA respectively have been determined for Conservation Drive, Beaver Creek Road and Erbsville Road at the Northgate and Erbsville Kartway Subdivisions. Calculated noise levels are summarized in Table 8, daytime noise levels govern over night-time noise levels. These setbacks are shown graphically for the subject lands on attached Noise Assessment Plan (MTE Drawing-NA1.1); only the nearest setback line has been shown. Please note that Setback Line 1 is not shown as it does not have any impact on the residential lots and blocks and therefore special building components are not required. There is a small section of the development between setback Line 1 (<15m) and Line 2 on Conservation Drive, that should be further assessed once detailed site plan information is available. This section is located on Block 1, Block 4, Multiple Residential Block 2, Block 3, Block 18, and Block 19 in the Northgate development and on Block 1 and Block 24 in the Erbsville Kartway development.

Day-time, outdoor noise levels were calculated at a location considered to be the outdoor recreation area, 3m off of the building envelope and at a height of 1.5m. Indoor day-time and night-time noise levels for the living room and bedroom areas were calculated at the building envelope face, 1.5m and 4.5m respectively above ground level.

4.2 Noise Attenuation Barrier

Table 8 indicates that outdoor amenity areas located between Conservation Drive and Setback Line 2 on Northgate and Erbsville Kartway Subdivisions may require a private acoustical barrier for noise attenuation and a noise warning clause. The setback Line 2 is shown on the attached NA1.1 drawing. It is recommended that no outdoor amenity areas are located in the highlighted area between Setback Line 2 and Conservation Drive. This can be regulated by the proposed zoning by-law and site design. With appropriate planning, an attenuation barrier will not be required. Free-field outdoor noise levels will not exceed 60dBA beyond Setback Line 2 for day-time outdoor noise levels and thus will not require a noise attenuation barrier.

TABLE 8: SUMMARY OF ROAD TRAFFIC NOISE LEVELS

Setback Line		Outdoor Recreation Area (OLA)[2]	DAY-TIME NOISE LEVELS								NIGHT-TIME NOISE LEVELS	
			Indoor Noise Level Limit (dBA)	Outdoor Living Area (OLA) Noise Level Limit[1] (dBA)	Distance from Centre Line to Achieve Limit (m)					Comments	Indoor Noise Level Limit (dBA)	Comment
					Conservation Drive Segment 1	Conservation Drive Segment 2	Beaver Creek Road Segment 1	Beaver Creek Road Segment 2	Erbsville Road			
2	CDS1SB2	Yes	-	60	19.5	-	-	-	-	Road barrier required for outdoor amenity areas constructed between setback line 2 and Conservation Drive (segment 1).	N/A	N/A
	CDS2SB2	Yes	-	60	-	16.6	-	-	-	Road barrier required for outdoor amenity areas constructed between setback line 2 and Conservation Drive (segment 2). No outdoor amenity space in this area.		
	BCRS1SB2	Yes	-	60	-	-	<15	-	-	Road barrier required for outdoor amenity areas constructed between setback line 2(~15m) and Beaver Creek Road (segment 1). No outdoor amenity space in this area.		
	BCRS2SB2	Yes	-	60	-	-	-	<15	-	Road barrier required for outdoor amenity areas constructed between setback line 2(~15m) and Beaver Creek Road (segment 2).		
	ERSB2	Yes	-	60	-	-	-	-	28.9	No effect on the proposed subdivision		
	CDBCRA2	Yes	-	60	52.0	-	15.0	-	-	Road barrier required for outdoor amenity areas constructed between Point of Assessment 2 and Conservation Drive or Beaver Creek Road.		
	CDBCRB2	Yes	-	60	30.0	-	19.8	-	-			
	CDBCRC2	Yes	-	60	20.5	-	61.0	-	-			
	CDBCRD2	Yes	-	60	19.5	-	300.0	-	-			
	ERCDH2	Yes	-	60	-	500.0	-	-	28.9	No effect on the proposed subdivision		
	ERCDI2	Yes	-	60	-	56.0	-	-	31.5			
	ERCDJ2	Yes	-	60	-	16.6	-	-	500			
	ERCDK2	Yes	-	60	-	17.5	-	-	130.0			
3	CDS1SB3	No	45	55	39.1					Noise warning clause required for Block 5-Multiple Residential, Block 4, Block 1, and Block 3-Multiple Residential at Beaver Creek; Block 2-Multiple Residential, Block 18-Multiple Residential, Block 1, Block 19-Multiple Residential, and Block 4 at Conservation Drive.	40	Day-time governs
	CDS2SB3	No	45	55	-	33.2					40	
	BCRS1SB3	No	45	55	-		26.3				40	
	BCRS2SB3	No	45	55	-			27.6			40	
	ERSB3	No	45	55					57.9		40	
	CDBCRA3	No	45	55	500.0			27.8			40	
	CDBCRB3	No	45	55	170.0		27.8				40	
	CDBCRC3	No	45	55	105.0		30.0				40	
	CDBCRD3	No	45	55	60.8		39.0				40	
	CDBCRE3	No	45	55	42.9		85.0				40	
	CDBCRF3	No	45	55	39.1		500.0				40	
	CDBCRG3	No	45	55	200.0			28.8			40	
	ERCDH3	No	45	55		500.0			57.9	No effect on the proposed subdivision	40	
	ERCDI3	No	45	55		55.4			81.0		40	
	ERCDJ3	No	45	55		39.1			137.5		40	
	ERCDK3	No	45	55		70.5			71.0		40	
	ERCDL3	No	45	55		33.8			500.0		40	

CDS1 Conservation Drive Segment 1
CDS2 Conservation Drive Segment 2
BCRS1 Beaver Creek Road Segment 1
BCRS2 Beaver Creek Road Segment 2
ER Erbsville Road
SB2 Setback 2
SB3 Setback 3

Notes:
1 - Assuming standard wall construction (provides 10dBA noise level attenuation).
2 - OLA means Outdoor Living Area (3m off building envelope at 1.5m high).

4.3 Noise Warning Clauses

Noise calculations indicate that the outdoor noise level between the road right-of ways and Setback Line 3 exceed the allowable indoor day-time noise level of 45 dBA (corresponding to plane of window limits of 55dBA). Since the night-time noise levels at Setback Line 3 are less than the allowable night-time noise level of 40 dBA (50 dBA at the pane of window), the day-time criteria governs.

Based on the above information, provisions for air conditioning and a noise warning clause would be required for lots with residential units constructed between Setback Line 1 and Setback Line 3. The noise levels beyond Setback Line 3 meets the MOE's criteria for both day-time and night-time conditions.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the foregoing analysis, the following conclusions and recommendations can be made for the Northgate and Erbsville Kartway developments:

1. Control measures in the form of a noise wall and/or berm may be required for blocks/lots with Outdoor Living Areas between Conservation Drive segment 1, Conservation Drive segment 2 and Setback line 2. Consideration should be given to orienting Outdoor Living Areas to the rear of buildings to minimize noise wall requirements.

2. Control measures in the form of a noise warning clause are required for Outdoor Amenity Areas (OAA) between Setback line 2 and Setback Line 3.

3. Forced air heating with provisions for central air conditioning is to be installed in all dwellings built between the Setback Line 1 and Setback Line 3, such that the unattenuated noise does not adversely affect the occupants.

4. The requirement for noise warning clauses shall be included in the registered subdivision agreement upon completion of a Final Environmental Noise Assessment. These noise warning clauses could be worded as follows:

   Lots between Conservation Drive (segments 1 and 2) and SBL 2
   NWC TYPE B & C: Purchasers/tenants are advised that despite the inclusion of noise control features in the development and within the building units, sound levels due to increasing road traffic may on occasions interfere with some activities of the dwelling occupants as the sound levels exceed the sound level limits of the Municipality and the Ministry of Environment. This dwelling unit has been designed with the provision for adding central air conditioning at the occupant's discretion. Installation of central air conditioning by the occupant in low and medium density developments will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the sound level limits of the Municipality and the Ministry of Environment.

   Lots with OAA's between SBL 2 and SBL 3
   NWC TYPE A: Purchasers/tenants are advised that the sound levels due to increasing road traffic may occasionally interfere with some activities of the dwelling occupants as the sound levels exceed the sound level limits of the Municipality and the Ministry of Environment.

   Lots between SBL 1 and SBL 3
   NWC TYPE A & C: Purchasers/tenants are advised that the sound levels due to increasing road traffic may occasionally interfere with some activities of the dwelling occupants as the sound levels exceed the sound level limits of the Municipality and the Ministry of Environment. This dwelling unit has been designed with the provision

for adding central air conditioning at the occupant's discretion. Installation of central air conditioning by the occupant in low and medium density developments will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the sound level limits of the Municipality and the Ministry of Environment.

It is recommended that:

1. A Final Environmental Noise Assessment Report be completed as part of Final Engineering for each of the Northgate and Erbsville Kartway Subdivisions once finished grades and house locations have been established.

All of which is respectfully submitted;

Yours truly,

MTE CONSULTANTS INC.





Lilian C. Moreno, P.Eng.
Designer

Valentina Lazic, P.Eng.
Design Engineer

APPENDIX A

STATUTORY DECLARATION

CONSULTANT STATUTORY DECLARATION

CANADA	)	In the Matter of the
	)	Environmental Protection
PROVINCE OF ONTARIO	)	Act and the Planning Act
	)	And in the Matter of Northgate Subdivision and Erbsville Kartway
	)	in the City of Waterloo
	)	in the Regional Municipality
	)	of Waterloo

I, Valentina Lazic, of the City of Kitchener, in the Regional Municipality of Waterloo, SOLEMNLY DECLARE THAT:

1. I am a Licenced Professional Engineer employed by MTE Consultants Inc. which holds a Certificate of Authorization and have personal knowledge of the matters set out below.

2. I was retained or employed as the principal consultant to undertake the assessment of noise impacts and recommendation of noise mitigation measures for the property described as Northgate Subdivision & Erbsville Kartway Subdivision, Beaver Creek Meadows District, Waterloo, in the Municipality of Waterloo.

3. I had the expertise required to perform these services. Any assessment activities or recommendations requiring the application of engineering principles have been undertaken or supervised by an engineer qualified to perform such services.

4. The information used in the study entitled Preliminary Environmental Noise Assessment, Northgate and Erbsville Kartway Subdivisions, Beaver Creek Meadows District; Waterloo, Ontario dated July 5, 2017 is the best available information as of the date of the study.

5. The noise level calculations, the interpretation of noise attenuation requirements, and the recommended measures are in accordance with the Ministry of the Environment Guidelines (Publication NPC-300 (2013)), Region of Waterloo Guideline for Noise Policies (1999).

6. The physical noise attenuation measures proposed in this study are feasible to implement and will provide the level of attenuation indicated in the study.

7. I acknowledge that this study may be subject to a peer review conducted at my cost.

8. I acknowledge that public authorities and future owners, occupants and others may rely on this statement.

AND I make this solemn Declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath.

DECLARED before me in the City of Kitchener,)
in the Regional Municipality of Waterloo)
this July 5, 2017.)

Christine Fortuna

Christine Cora Fortuna, a Commissioner, etc.,
Province of Ontario, for McCarter Grespan Beynon Weir
Professional Corporation, Barristers and Solicitors.
Expires May 1, 2019.

APPENDIX B

ROAD TRAFFIC DATA

Drawing on experience...Building on strength.

Road Segment Traffic Volume Calculations

NORTHGATE SUBDIVISION

Waterloo, Ontario

Project No.	39502-104
Date:	February 24, 2017
Traffic Data per:	Stantec: Beaver Creek Road and Conservation Drive Upgrades and Extension Municipal Class EA, November 11, 2015
Calculated By:	LCM
File:	Q:\39502\104\Preliminary Environmental Noise Assessment\39502-104 - Traffic volumes.xls

ROAD SEGMENT	PEAK HOUR SITE TRAFFIC 2035 (Traffic Overview Study)											
	AM PEAK HOUR SITE-TRAFFIC 2035					PM PEAK HOUR SITE-TRAFFIC 2035					PEAK HOUR SITE GENERATED TRAFFIC 2035	TOTAL TRAFFIC VOLUME PER DAY 2035
	Eastbound Way	Westbound way	Northbound way	Southbound Way	TOTAL	Eastbound Way	Westbound way	Northbound way	Southbound Way	TOTAL	ULTIMATE (2035)	ULTIMATE (2035)
Conservation Drive Between Beaver Creek Rd and Creekside Church	754	388			1142	541	787			1328	1328	13,280
Conservation Drive Between Creekside Church and Erbsville Rd	498	333			831	453	561			1014	1014	10,140
Beaver Creek Rd Between Conservation Drive and Green Acres Park Ln			233	213	446			291	334	625	625	6,250
Beaver Creek Rd Between Green Acres Pak Ln and Laurelwood Drive			168	317	485			368	307	675	675	6,750
Erbsville Rd (South of Conservation Drive)			333	367	700			480	499	979	979	9,790

- % of growth : 1.5%
- Site traffic at 2035 Ultimate Forecast Traffic (Traffic Overview Study)

Lilian Moreno

From: Caroline Amyot <Caroline.Amyot@waterloo.ca>
Sent: Tuesday, March 28, 2017 1:33 PM
To: Lilian Moreno
Cc: Valentina Lazic
Subject: FW: North gate Subdivision: Preliminary Environmental Noise Assessment

Lillian,
Traffic count and breakdown is good – see email below from Stantec.
Let me know if you have any more questions.
Caroline

From: Mueller, Al [mailto:al.mueller@stantec.com]
Sent: Tuesday, March 28, 2017 1:28 PM
To: Caroline Amyot
Cc: Frensch, Kelly
Subject: FW: North gate Subdivision: Preliminary Environmental Noise Assessment

Hi Caroline,

I apologize…this slipped through the cracks while we were on vacation.

Our traffic people have confirmed that the breakdown is appropriate.

Regards,

Al Mueller
Project Manager, Water
Stantec
100-300 Hagey Boulevard, Waterloo ON N2L 0A4
Phone: (519) 585-7261
Cell: (519) 577-7389
Fax: (519) 579-6733
al.mueller@stantec.com



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From: Vastag, Robert
Sent: March-28-17 11:01 AM
To: Mueller, Al <al.mueller@stantec.com>
Cc: Frensch, Kelly <Kelly.Frensch@stantec.com>; O'Grady, Lauren <Lauren.O'Grady@stantec.com>
Subject: RE: North gate Subdivision: Preliminary Environmental Noise Assessment

Hi Al,

Yes, it is appropriate to use the heavy vehicle breakdown found in the existing counts.

Thanks,
Rob

Robert Vastag, RPP
Senior Transportation Planner
Stantec
400 - 1331 Clyde Avenue, Ottawa ON K2C 3G4
Phone: (613) 724-4354
Cell: (613) 853-2837
Fax: (613) 722-2799
Robert.Vastag@stantec.com



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From: Mueller, Al
Sent: Tuesday, March 28, 2017 10:57 AM
To: Vastag, Robert <Rob.Vastag@stantec.com>
Cc: Frensch, Kelly <Kelly.Frensch@stantec.com>; O'Grady, Lauren <Lauren.O'Grady@stantec.com>
Subject: FW: North gate Subdivision: Preliminary Environmental Noise Assessment

Hi Rob,

See the email request below regarding traffic/vehicle type breakdown. Is this something that we can confirm?

Thanks,

Al Mueller
Project Manager, Water
Stantec
100-300 Hagey Boulevard, Waterloo ON N2L 0A4
Phone: (519) 585-7261
Cell: (519) 577-7389
Fax: (519) 579-6733
al.mueller@stantec.com



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Please consider the environment before printing this email.

Lilian Moreno, P.Eng. | Designer
MTE Consultants Inc.
T: 519-743-6500 x1276 | lmoreno@mte85.com

From: Caroline Amyot [mailto:Caroline.Amyot@waterloo.ca]
Sent: Monday, February 27, 2017 2:02 PM
To: Lilian Moreno
Subject: RE: North gate Subdivision: Preliminary Environmental Noise Assessment

Hi Lilian,

I have forwarded your question/assumption regarding 2035 vehicle breakdown onto Stantec who completed the Traffic Study. Both Al (road design) and Kelly (PM) are on holiday this week so I don't know if I will get a response back until next week.
Your assumption seems reasonable, but I would like to have Stantec confirm this since they completed the study.

Thanks,
Caroline

From: Lilian Moreno [mailto:lmoreno@mte85.com]
Sent: Thursday, February 23, 2017 3:50 PM
To: Caroline Amyot
Subject: RE: North gate Subdivision: Preliminary Environmental Noise Assessment

Hi Caroline,

We will use the 2035 Ultimate Forecast traffic volumes provide in the Appendix F. This appendix doesn't have the medium/heavy truck breakdown for 2035. The appendix provides the medium/heavy truck, cars breakdown for the counts done in 2014 and 2015. We are assuming that we could use the following breakdown from the counts on 2015:

- **Conservation Drive (east of Beaver Creek Road):**
  Heavy Trucks: 0.7%
  Medium Trucks: 1.8%
  Cars: 97.5%
  Beaver Creek Road (south of Conservation Drive):
  Heavy Trucks: 0.2%
  Medium Trucks: 0.5%
  Cars: 99.3%
  Erbsville Road (south of conservation Drive):
  Heavy Trucks: 5.2%
  Medium Trucks: 3.3%
  Cars: 91.5%

Could you please confirm if we could use the above traffic breakdown for the noise assessment or could you provide the medium/heavy truck breakdown for 2035.

Thank you,

Lilian

Lilian Moreno, P.Eng. | **Designer**
MTE Consultants Inc.
T: 519-743-6500 x1276 | lmoreno@mte85.com

From: Caroline Amyot [mailto:Caroline.Amyot@waterloo.ca]
Sent: Friday, February 17, 2017 12:06 PM
To: Lilian Moreno
Cc: Valentina Lazic
Subject: Re: North gate Subdivision: Preliminary Environmental Noise Assessment

Also, yes you can use the numbers in the report for your noise analysis.
Caroline

Sent from my BlackBerry 10 smartphone on the Bell network.

From: Caroline Amyot
Sent: Friday, February 17, 2017 11:49 AM
To: Lilian Moreno

Cc: Valentina Lazic
Subject: RE: North gate Subdivision: Preliminary Environmental Noise Assessment

Hi Lilian,

See attached the Traffic Study Appendix you were referring to.
Let me know if you have any questions.

FYI – I will be updated the City website in the near future to include a link to all Appendices for the EA.

Caroline

From: Lilian Moreno [mailto:lmoreno@mte85.com]
Sent: Friday, February 17, 2017 11:02 AM
To: Caroline Amyot
Cc: Valentina Lazic
Subject: North gate Subdivision: Preliminary Environmental Noise Assessment

Hi Caroline,

I'm working on the Preliminary Environmental Noise Assessment for Northgate Subdivision. I checked the Beaver Creek Road and Conservation Dr. Upgrades and Extension of Municipal Services Class Environmental Assessment report posted in the City's website, the information related to the future traffic conditions is in Appendix F, but this appendix is missing, could you please provide a copy of this appendix.

Also, could you please confirm if we could use the traffic data from this report for our noise assessment or if you could provide updated information for the current traffic volumes, projected annual growth rate, proposed posted speed limit, a medium/heavy truck distribution, of the following streets :

- Conservation Drive
- Beaver Creek Road
- Erbsville Road

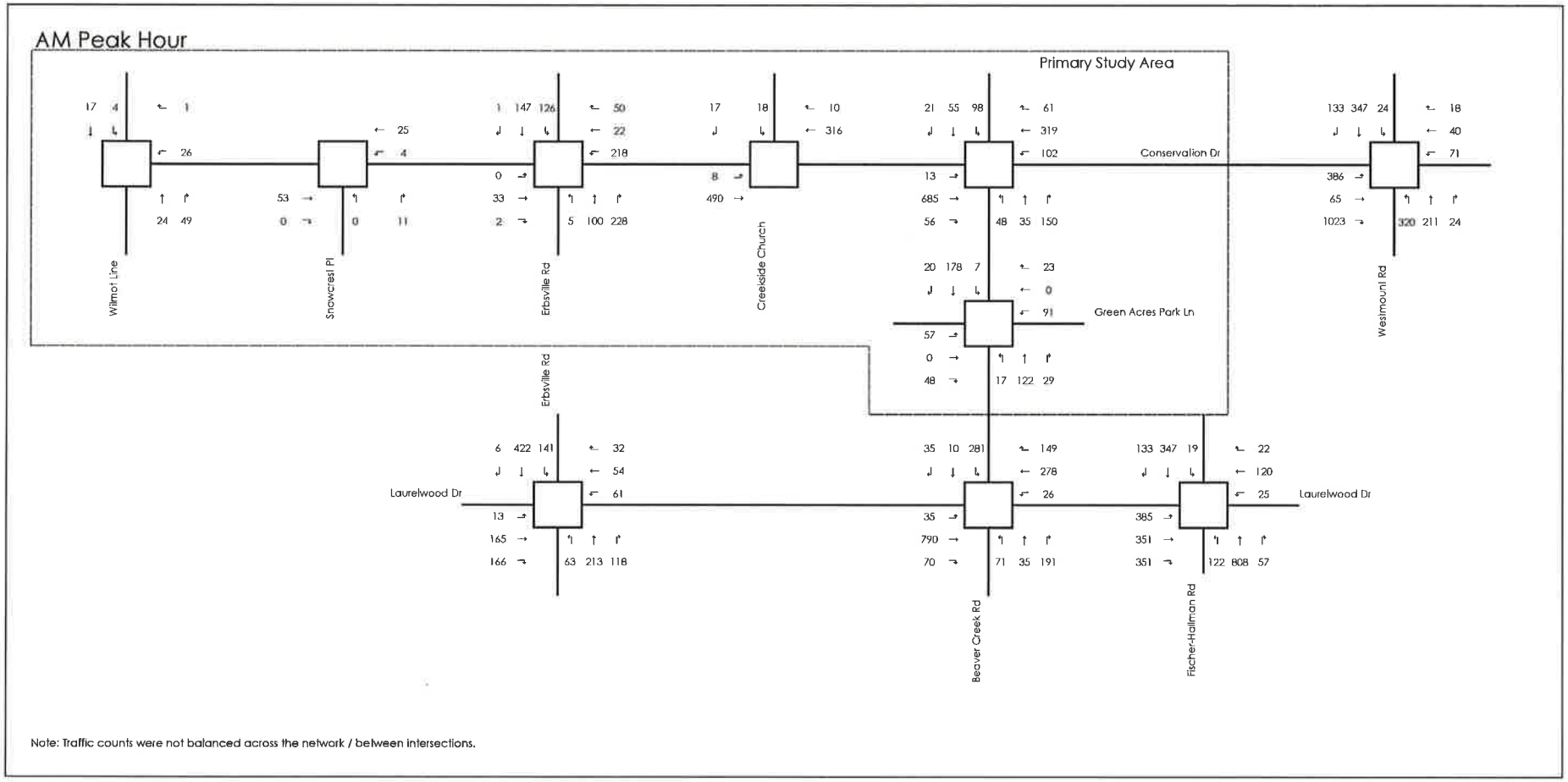
Thank you,

Lilian

Lilian Moreno, P.Eng. | **Designer**
MTE Consultants Inc.
T: 519-743-6500 x1276 | lmoreno@mte85.com
520 Bingemans Centre Drive, Kitchener, Ontario N2B 3X9
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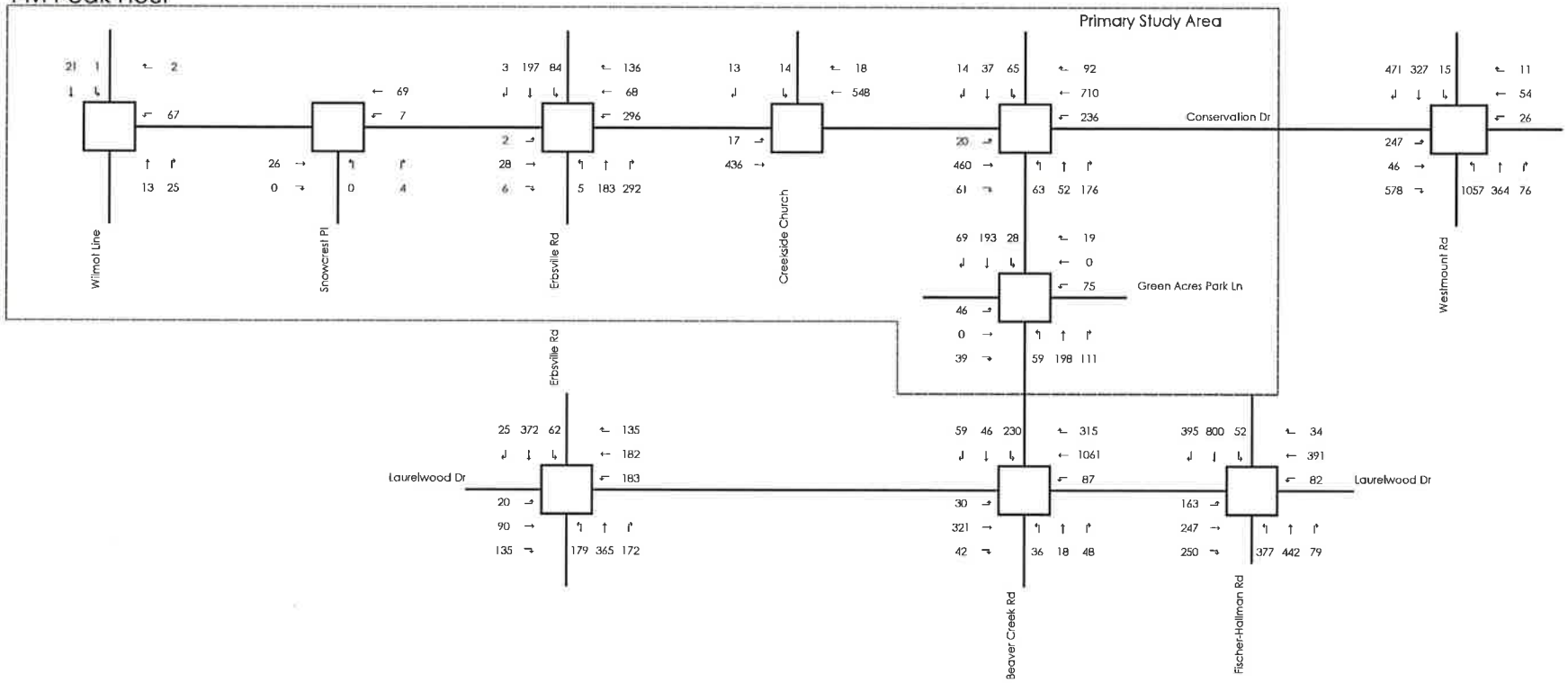


Note: Traffic counts were not balanced across the network / between intersections.

Stantec Consulting Ltd.
1331 Clyde Avenue, Suite 400
Ottawa, ON, Canada K2C 3G4
Tel: (613) 722-4420
www.stantec.com

City of Waterloo
Beaver Creek Rd and Conservation Dr Widening EA
Figure 12
2035 Ultimate Forecast Traffic Volumes, AM Peak

PM Peak Hour



Note: Traffic counts were not balanced across the network / between intersections.

Stantec

Stantec Consulting Ltd.
1331 Clyde Avenue, Suite 400
Ottawa, ON, Canada K2C 3G4
Tel: (613) 722-4420
www.stantec.com

City of Waterloo
Beaver Creek Rd and Conservation Dr Widening EA
Figure 13
2035 Ultimate Forecast Traffic Volumes, PM Peak

Conservation Dr @ Erbsville Rd

Total Count Diagram

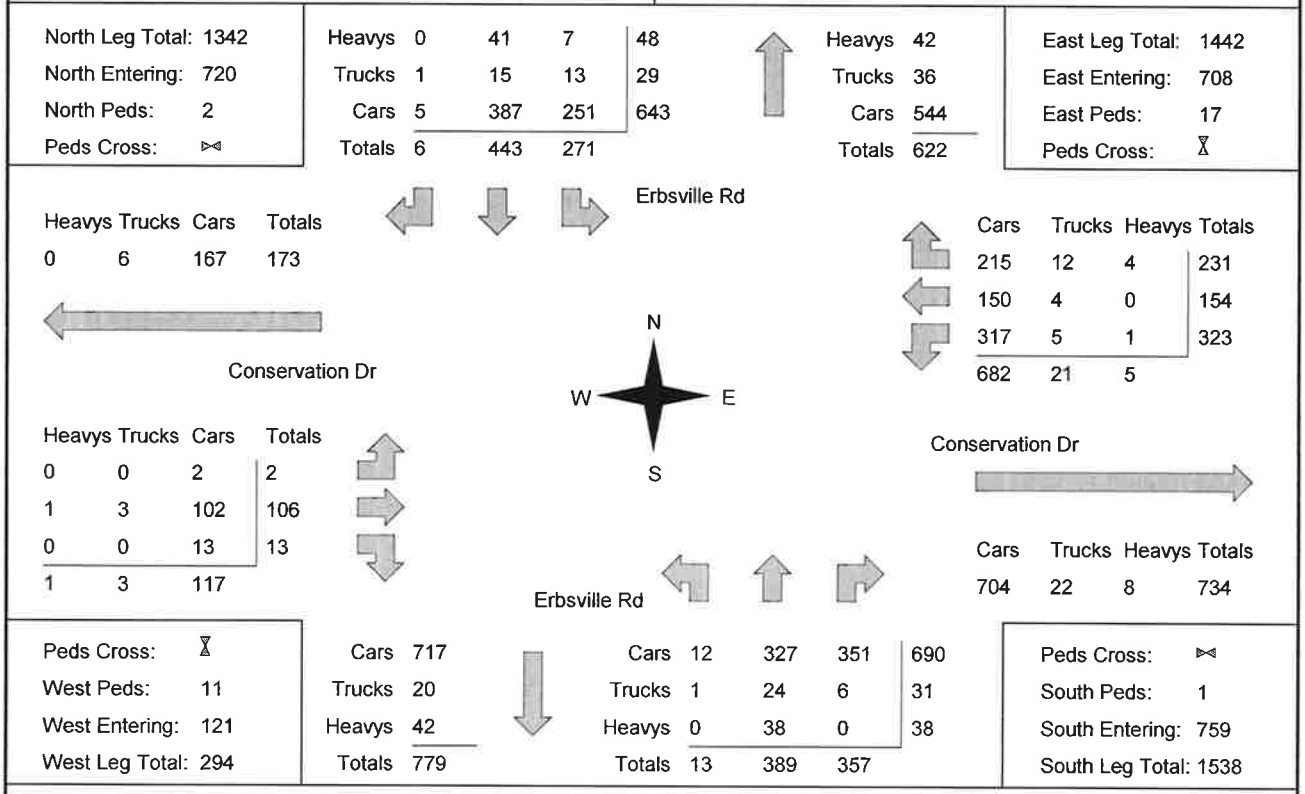
Municipality: Waterloo
Site #: 0000000001
Intersection: Erbsville Rd & Conservation Dr
TFR File #: 1
Count date: 28-Jul-2015

Weather conditions:
Clear/Dry

Person(s) who counted:
Rick

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

Major Road: Erbsville Rd runs N/S



Comments

Conservation Dr @ Beaver Creek Rd

Total Count Diagram

Municipality: Waterloo
Site #: 0000000003
Intersection: Conservation Dr & Beaver Creek Rc
TFR File #: 1
Count date: 28-Jul-2015

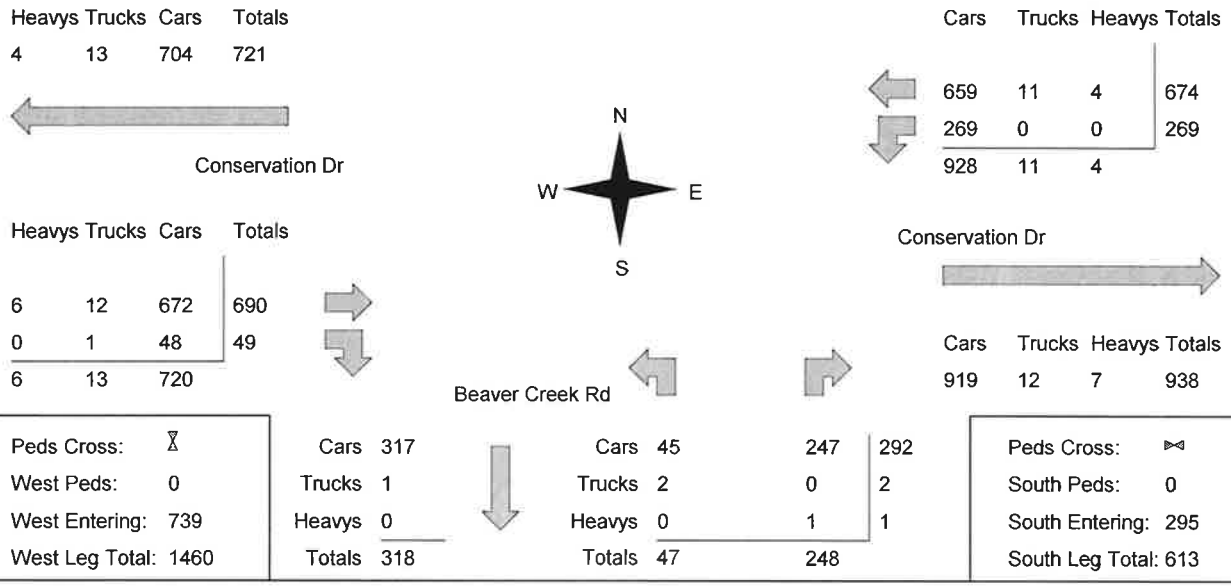
Weather conditions:
Clear/Dry

Person(s) who counted:
Diane

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

Major Road: Conservation Dr runs W/E

East Leg Total: 1881
East Entering: 943
East Peds: 2
Peds Cross: ⧖



Peds Cross: ⧖
West Peds: 0
West Entering: 739
West Leg Total: 1460

Cars 317
Trucks 1
Heavys 0
Totals 318

Cars 45 247 292
Trucks 2 0 2
Heavys 0 1 1
Totals 47 248

Peds Cross: ⋈
South Peds: 0
South Entering: 295
South Leg Total: 613

Comments

APPENDIX C

STAMSON NOISE CALCULATIONS

Drawing on experience...Building on strength.

STAMSON 5.0 NORMAL REPORT Date: 01-03-2017 17:24:23
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: CDS1SB2.TE Time Period: Day/Night 16/8 hours
Description: Conservation Dr-Segment 1(Beaver Creek Rd-Creekside Church) SB2

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

Car traffic volume : 11653/1295 veh/TimePeriod *
Medium truck volume : 215/24 veh/TimePeriod *
Heavy truck volume : 84/9 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 4 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 13280
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 1.80
Heavy Truck % of Total Volume : 0.70
Day (16 hrs) % of Total Volume : 90.00

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

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 19.53 / 19.53 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Conservation (day)

Source height = 0.92 m

ROAD (0.00 + 60.00 + 0.00) = 60.00 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 63.36 0.00 -1.90 -1.46 0.00 0.00 0.00 60.00

Segment Leq : 60.00 dBA

Total Leq All Segments: 60.00 dBA

Results segment # 1: Conservation (night)

Source height = 0.91 m

ROAD (0.00 + 53.63 + 0.00) = 53.63 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.59 56.78 0.00 -1.82 -1.33 0.00 0.00 0.00 53.63

Segment Leq : 53.63 dBA

Total Leq All Segments: 53.63 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 60.00
(NIGHT): 53.63

STAMSON 5.0 NORMAL REPORT Date: 03-03-2017 10:45:46
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: CDS1SB3.TE Time Period: Day/Night 16/8 hours
Description: Conservation Drive-Segment 1(Beaver Creek Rd-Creekside Church)SB3

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

Car traffic volume : 11653/1295 veh/TimePeriod *
Medium truck volume : 215/24 veh/TimePeriod *
Heavy truck volume : 84/9 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 4 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 13280
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 1.80
Heavy Truck % of Total Volume : 0.70
Day (16 hrs) % of Total Volume : 90.00

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

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 39.10 / 39.10 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Conservation (day)

Source height = 0.92 m

ROAD (0.00 + 55.00 + 0.00) = 55.00 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 63.36 0.00 -6.91 -1.46 0.00 0.00 0.00 55.00

Segment Leq : 55.00 dBA

Total Leq All Segments: 55.00 dBA

Results segment # 1: Conservation (night)

Source height = 0.91 m

ROAD (0.00 + 48.84 + 0.00) = 48.84 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.59 56.78 0.00 -6.61 -1.33 0.00 0.00 0.00 48.84

Segment Leq : 48.84 dBA

Total Leq All Segments: 48.84 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 55.00
(NIGHT): 48.84

STAMSON 5.0 NORMAL REPORT Date: 01-03-2017 15:42:24
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: CDS2SB2.TE Time Period: Day/Night 16/8 hours
Description: Conservation Dr-Segment 2(w of Creekside Ch.)SB2

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

Car traffic volume : 8898/989 veh/TimePeriod *
Medium truck volume : 164/18 veh/TimePeriod *
Heavy truck volume : 64/7 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 10140
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 1.80
Heavy Truck % of Total Volume : 0.70
Day (16 hrs) % of Total Volume : 90.00

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

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 16.60 / 16.60 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Conservation (day)

Source height = 0.92 m

ROAD (0.00 + 60.00 + 0.00) = 60.00 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 62.19 0.00 -0.73 -1.46 0.00 0.00 0.00 60.00

Segment Leq : 60.00 dBA

Total Leq All Segments: 60.00 dBA

Results segment # 1: Conservation (night)

Source height = 0.91 m

ROAD (0.00 + 53.59 + 0.00) = 53.59 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.59 55.63 0.00 -0.70 -1.33 0.00 0.00 0.00 53.59

Segment Leq : 53.59 dBA

Total Leq All Segments: 53.59 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 60.00
(NIGHT): 53.59

STAMSON 5.0 NORMAL REPORT Date: 01-03-2017 16:12:41
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: CDS2SB2.TE Time Period: Day/Night 16/8 hours
Description: Conservation Dr-Segment 2(w of Creekside Ch.)SB3

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

Car traffic volume : 8898/989 veh/TimePeriod *
Medium truck volume : 164/18 veh/TimePeriod *
Heavy truck volume : 64/7 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 10140
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 1.80
Heavy Truck % of Total Volume : 0.70
Day (16 hrs) % of Total Volume : 90.00

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

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 33.21 / 33.21 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Conservation (day)

Source height = 0.92 m

ROAD (0.00 + 55.00 + 0.00) = 55.00 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 62.19 0.00 -5.73 -1.46 0.00 0.00 0.00 55.00

Segment Leq : 55.00 dBA

Total Leq All Segments: 55.00 dBA

Results segment # 1: Conservation (night)

Source height = 0.91 m

ROAD (0.00 + 48.81 + 0.00) = 48.81 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.59 55.63 0.00 -5.48 -1.33 0.00 0.00 0.00 48.81

Segment Leq : 48.81 dBA

Total Leq All Segments: 48.81 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 55.00
(NIGHT): 48.81

STAMSON 5.0 NORMAL REPORT Date: 02-03-2017 09:36:38
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: BCRS1SB2.TE Time Period: Day/Night 16/8 hours
Description: Beaver creek Rd-Segment 1 SB2 (<15m)

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

Car traffic volume : 5586/621 veh/TimePeriod *
Medium truck volume : 28/3 veh/TimePeriod *
Heavy truck volume : 11/1 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 6250
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 0.50
Heavy Truck % of Total Volume : 0.20
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Beaver Creek (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 15.00 / 15.00 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Beaver Creek (day)

Source height = 0.66 m

ROAD (0.00 + 59.05 + 0.00) = 59.05 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 60.51 0.00 0.00 -1.46 0.00 0.00 0.00 59.05

Segment Leq : 59.05 dBA

Total Leq All Segments: 59.05 dBA

Results segment # 1: Beaver Creek (night)

Source height = 0.63 m

ROAD (0.00 + 52.54 + 0.00) = 52.54 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.60 53.89 0.00 0.00 -1.35 0.00 0.00 0.00 52.54

Segment Leq : 52.54 dBA

Total Leq All Segments: 52.54 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 59.05
(NIGHT): 52.54

STAMSON 5.0 NORMAL REPORT Date: 01-03-2017 14:11:10
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: BCRS1SB3.TE Time Period: Day/Night 16/8 hours
Description: Beaver Creek Rd(Conservation Dr-Green Acre L)Segment 1 SB3

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

Car traffic volume : 5586/621 veh/TimePeriod *
Medium truck volume : 28/3 veh/TimePeriod *
Heavy truck volume : 11/1 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 6250
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 0.50
Heavy Truck % of Total Volume : 0.20
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Beaver Creek (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 26.31 / 26.31 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Beaver Creek (day)

Source height = 0.66 m

ROAD (0.00 + 55.00 + 0.00) = 55.00 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 60.51 0.00 -4.05 -1.46 0.00 0.00 0.00 55.00

Segment Leq : 55.00 dBA

Total Leq All Segments: 55.00 dBA

Results segment # 1: Beaver Creek (night)

Source height = 0.63 m

ROAD (0.00 + 48.64 + 0.00) = 48.64 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.60 53.89 0.00 -3.89 -1.35 0.00 0.00 0.00 48.64

Segment Leq : 48.64 dBA

Total Leq All Segments: 48.64 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 55.00
(NIGHT): 48.64

STAMSON 5.0 NORMAL REPORT Date: 06-03-2017 09:14:05
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: BCRS2SB2.TE Time Period: Day/Night 16/8 hours
Description: Beaver Creek Rd Segment 2(South of Green Acres Ln) SB2 (<15m)

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

Car traffic volume : 6032/670 veh/TimePeriod *
Medium truck volume : 30/3 veh/TimePeriod *
Heavy truck volume : 12/1 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 6750
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 0.50
Heavy Truck % of Total Volume : 0.20
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Beaver Creek (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 15.00 / 15.00 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Beaver Creek (day)

Source height = 0.67 m

ROAD (0.00 + 59.39 + 0.00) = 59.39 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.66	60.84	0.00	0.00	-1.46	0.00	0.00	0.00	59.39

Segment Leq : 59.39 dBA

Total Leq All Segments: 59.39 dBA
Results segment # 1: Beaver Creek (night)

Source height = 0.62 m

ROAD (0.00 + 52.82 + 0.00) = 52.82 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	54.17	0.00	0.00	-1.35	0.00	0.00	0.00	52.82

Segment Leq : 52.82 dBA

Total Leq All Segments: 52.82 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 59.39
(NIGHT): 52.82

STAMSON 5.0 NORMAL REPORT Date: 01-03-2017 14:15:15
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: BCRS2SB3.TE Time Period: Day/Night 16/8 hours
Description: Beaver Creek Rd(South of Green Acre Ln) SB3

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

Car traffic volume : 6032/670 veh/TimePeriod *
Medium truck volume : 30/3 veh/TimePeriod *
Heavy truck volume : 12/1 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 6750
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 0.50
Heavy Truck % of Total Volume : 0.20
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Beaver Creek (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 27.55 / 27.55 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Beaver Creek (day)

Source height = 0.67 m

ROAD (0.00 + 55.00 + 0.00) = 55.00 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 60.84 0.00 -4.38 -1.46 0.00 0.00 0.00 55.00

Segment Leq : 55.00 dBA

Total Leq All Segments: 55.00 dBA

Results segment # 1: Beaver Creek (night)

Source height = 0.62 m

ROAD (0.00 + 48.61 + 0.00) = 48.61 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.60 54.17 0.00 -4.21 -1.35 0.00 0.00 0.00 48.61

Segment Leq : 48.61 dBA

Total Leq All Segments: 48.61 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 55.00
(NIGHT): 48.61

STAMSON 5.0 NORMAL REPORT Date: 01-03-2017 13:10:19
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: ERSB2.TE Time Period: Day/Night 16/8 hours
Description: Erbsville Road (south of Conservation Dr.) SB2

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

Car traffic volume : 8062/896 veh/TimePeriod *
Medium truck volume : 291/32 veh/TimePeriod *
Heavy truck volume : 458/51 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 9790
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 3.30
Heavy Truck % of Total Volume : 5.20
Day (16 hrs) % of Total Volume : 90.00

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

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 28.91 / 28.91 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Erbsville Rd (day)

Source height = 1.51 m

ROAD (0.00 + 60.00 + 0.00) = 60.00 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 66.19 0.00 -4.73 -1.46 0.00 0.00 0.00 60.00

Segment Leq : 60.00 dBA

Total Leq All Segments: 60.00 dBA

Results segment # 1: Erbsville Rd (night)

Source height = 1.51 m

ROAD (0.00 + 53.88 + 0.00) = 53.88 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.57 59.66 0.00 -4.47 -1.30 0.00 0.00 0.00 53.88

Segment Leq : 53.88 dBA

Total Leq All Segments: 53.88 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 60.00
(NIGHT): 53.88

STAMSON 5.0 NORMAL REPORT Date: 01-03-2017 14:32:28
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: ERSB3.TE Time Period: Day/Night 16/8 hours
Description: Erbsville Road (South of Conservation Dr) SB3

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

Car traffic volume : 8062/896 veh/TimePeriod *
Medium truck volume : 291/32 veh/TimePeriod *
Heavy truck volume : 458/51 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 9790
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 3.30
Heavy Truck % of Total Volume : 5.20
Day (16 hrs) % of Total Volume : 90.00

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

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 57.86 / 57.86 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Erbsville Rd (day)

Source height = 1.51 m

ROAD (0.00 + 55.00 + 0.00) = 55.00 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 66.19 0.00 -9.73 -1.46 0.00 0.00 0.00 55.00

Segment Leq : 55.00 dBA

Total Leq All Segments: 55.00 dBA

Results segment # 1: Erbsville Rd (night)

Source height = 1.51 m

ROAD (0.00 + 49.15 + 0.00) = 49.15 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.57 59.66 0.00 -9.20 -1.30 0.00 0.00 0.00 49.15

Segment Leq : 49.15 dBA

Total Leq All Segments: 49.15 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 55.00
(NIGHT): 49.15

STAMSON 5.0 NORMAL REPORT Date: 02-03-2017 10:25:17
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: CBCPOAA2.TE Time Period: Day/Night 16/8 hours
Description: Conservation Dr and Beaver Creek Rd POAA2

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

Car traffic volume : 11653/1295 veh/TimePeriod *
Medium truck volume : 215/24 veh/TimePeriod *
Heavy truck volume : 84/9 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 4 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 13280
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 1.80
Heavy Truck % of Total Volume : 0.70
Day (16 hrs) % of Total Volume : 90.00

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

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 52.00 / 52.00 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 5586/621 veh/TimePeriod *
Medium truck volume : 28/3 veh/TimePeriod *
Heavy truck volume : 11/1 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 6250

Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 0.50
Heavy Truck % of Total Volume : 0.20
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 2: Beaver Creek (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 15.00 / 15.00 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Conservation (day)

Source height = 0.92 m

ROAD (0.00 + 52.94 + 0.00) = 52.94 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 63.36 0.00 -8.96 -1.46 0.00 0.00 0.00 52.94

Segment Leq : 52.94 dBA

Results segment # 2: Beaver Creek (day)

Source height = 0.66 m

ROAD (0.00 + 59.05 + 0.00) = 59.05 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 60.51 0.00 0.00 -1.46 0.00 0.00 0.00 59.05

Segment Leq : 59.05 dBA

Total Leq All Segments: 60.00 dBA

Results segment # 1: Conservation (night)

Source height = 0.91 m

ROAD (0.00 + 46.88 + 0.00) = 46.88 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.59	56.78	0.00	-8.57	-1.33	0.00	0.00	0.00	46.88

Segment Leq : 46.88 dBA

Results segment # 2: Beaver Creek (night)

Source height = 0.63 m

ROAD (0.00 + 52.54 + 0.00) = 52.54 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	53.89	0.00	0.00	-1.35	0.00	0.00	0.00	52.54

Segment Leq : 52.54 dBA

Total Leq All Segments: 53.58 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 60.00
(NIGHT): 53.58

Filename: CBCPOAB2.TE Time Period: Day/Night 16/8 hours
Description: Conservation Dr and Beaver Creek Rd POAB2

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

Car traffic volume : 11653/1295 veh/TimePeriod *
Medium truck volume : 215/24 veh/TimePeriod *
Heavy truck volume : 84/9 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 4 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 13280
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 1.80
Heavy Truck % of Total Volume : 0.70
Day (16 hrs) % of Total Volume : 90.00

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

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 30.00 / 30.00 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 5586/621 veh/TimePeriod *
Medium truck volume : 28/3 veh/TimePeriod *
Heavy truck volume : 11/1 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 6250

Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 0.50
Heavy Truck % of Total Volume : 0.20
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 2: Beaver Creek (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 19.75 / 19.75 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Conservation (day)

Source height = 0.92 m

ROAD (0.00 + 56.91 + 0.00) = 56.91 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 63.36 0.00 -5.00 -1.46 0.00 0.00 0.00 56.91

Segment Leq : 56.91 dBA

Results segment # 2: Beaver Creek (day)

Source height = 0.66 m

ROAD (0.00 + 57.07 + 0.00) = 57.07 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 60.51 0.00 -1.98 -1.46 0.00 0.00 0.00 57.07

Segment Leq : 57.07 dBA

Total Leq All Segments: 60.00 dBA

Results segment # 1: Conservation (night)

Source height = 0.91 m

ROAD (0.00 + 50.67 + 0.00) = 50.67 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.59 56.78 0.00 -4.78 -1.33 0.00 0.00 0.00 50.67

Segment Leq : 50.67 dBA

Results segment # 2: Beaver Creek (night)

Source height = 0.63 m

ROAD (0.00 + 50.63 + 0.00) = 50.63 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.60 53.89 0.00 -1.91 -1.35 0.00 0.00 0.00 50.63

Segment Leq : 50.63 dBA

Total Leq All Segments: 53.66 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 60.00
(NIGHT): 53.66

STAMSON 5.0 NORMAL REPORT Date: 02-03-2017 13:53:54
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: CBCPOAC2.TE Time Period: Day/Night 16/8 hours
Description: Conservation Dr and Beaver Creek Rd POAC2

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

Car traffic volume : 11653/1295 veh/TimePeriod *
Medium truck volume : 215/24 veh/TimePeriod *
Heavy truck volume : 84/9 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 4 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 13280
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 1.80
Heavy Truck % of Total Volume : 0.70
Day (16 hrs) % of Total Volume : 90.00

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

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 20.50 / 20.50 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 5586/621 veh/TimePeriod *
Medium truck volume : 28/3 veh/TimePeriod *
Heavy truck volume : 11/1 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 6250

Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 0.50
Heavy Truck % of Total Volume : 0.20
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 2: Beaver Creek (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 61.00 / 61.00 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Conservation (day)

Source height = 0.92 m

ROAD (0.00 + 59.65 + 0.00) = 59.65 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 63.36 0.00 -2.25 -1.46 0.00 0.00 0.00 59.65

Segment Leq : 59.65 dBA

Results segment # 2: Beaver Creek (day)

Source height = 0.66 m

ROAD (0.00 + 48.94 + 0.00) = 48.94 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 60.51 0.00 -10.11 -1.46 0.00 0.00 0.00 48.94

Segment Leq : 48.94 dBA

Total Leq All Segments: 60.00 dBA

Results segment # 1: Conservation (night)

Source height = 0.91 m

ROAD (0.00 + 53.30 + 0.00) = 53.30 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.59	56.78	0.00	-2.15	-1.33	0.00	0.00	0.00	53.30

Segment Leq : 53.30 dBA

Results segment # 2: Beaver Creek (night)

Source height = 0.63 m

ROAD (0.00 + 42.82 + 0.00) = 42.82 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	53.89	0.00	-9.72	-1.35	0.00	0.00	0.00	42.82

Segment Leq : 42.82 dBA

Total Leq All Segments: 53.67 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 60.00
(NIGHT): 53.67

Filename: CBCPOAD2.TE Time Period: Day/Night 16/8 hours
Description: Conservation Dr and Beaver Creek Rd POAD2

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

Car traffic volume : 11653/1295 veh/TimePeriod *
Medium truck volume : 215/24 veh/TimePeriod *
Heavy truck volume : 84/9 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 4 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 13280
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 1.80
Heavy Truck % of Total Volume : 0.70
Day (16 hrs) % of Total Volume : 90.00

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

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 19.53 / 19.53 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 5586/621 veh/TimePeriod *
Medium truck volume : 28/3 veh/TimePeriod *
Heavy truck volume : 11/1 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 6250

Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 0.50
Heavy Truck % of Total Volume : 0.20
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 2: Beaver Creek (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 300.00 / 300.00 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Conservation (day)

Source height = 0.92 m

ROAD (0.00 + 60.00 + 0.00) = 60.00 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 63.36 0.00 -1.90 -1.46 0.00 0.00 0.00 60.00

Segment Leq : 60.00 dBA

Results segment # 2: Beaver Creek (day)

Source height = 0.66 m

ROAD (0.00 + 37.45 + 0.00) = 37.45 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 60.51 0.00 -21.60 -1.46 0.00 0.00 0.00 37.45

Segment Leq : 37.45 dBA

Total Leq All Segments: 60.02 dBA

Results segment # 1: Conservation (night)

Source height = 0.91 m

ROAD (0.00 + 53.63 + 0.00) = 53.63 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.59 56.78 0.00 -1.82 -1.33 0.00 0.00 0.00 53.63

Segment Leq : 53.63 dBA

Results segment # 2: Beaver Creek (night)

Source height = 0.63 m

ROAD (0.00 + 31.77 + 0.00) = 31.77 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.60 53.89 0.00 -20.76 -1.35 0.00 0.00 0.00 31.77

Segment Leq : 31.77 dBA

Total Leq All Segments: 53.66 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 60.02
(NIGHT): 53.66

STAMSON 5.0 NORMAL REPORT Date: 06-03-2017 10:50:25
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: CBCPOAA3.TE Time Period: Day/Night 16/8 hours
Description: Conservation Dr and Beaver Creek Rd POAA3

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

Car traffic volume : 11653/1295 veh/TimePeriod *
Medium truck volume : 215/24 veh/TimePeriod *
Heavy truck volume : 84/9 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 4 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 13280
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 1.80
Heavy Truck % of Total Volume : 0.70
Day (16 hrs) % of Total Volume : 90.00

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

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 500.00 / 500.00 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 6032/670 veh/TimePeriod *
Medium truck volume : 30/3 veh/TimePeriod *
Heavy truck volume : 12/1 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 6750

Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 0.50
Heavy Truck % of Total Volume : 0.20
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 2: Beaver Creek (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 27.80 / 27.80 m
Receiver height : 1.50 / 0.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Conservation (day)

Source height = 0.92 m

ROAD (0.00 + 36.62 + 0.00) = 36.62 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 63.36 0.00 -25.28 -1.46 0.00 0.00 0.00 36.62

Segment Leq : 36.62 dBA

Results segment # 2: Beaver Creek (day)

Source height = 0.67 m

ROAD (0.00 + 54.94 + 0.00) = 54.94 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 60.84 0.00 -4.45 -1.46 0.00 0.00 0.00 54.94

Segment Leq : 54.94 dBA

Total Leq All Segments: 55.00 dBA

Results segment # 1: Conservation (night)

Source height = 0.91 m

ROAD (0.00 + 31.27 + 0.00) = 31.27 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.59	56.78	0.00	-24.18	-1.33	0.00	0.00	0.00	31.27

Segment Leq : 31.27 dBA

Results segment # 2: Beaver Creek (night)

Source height = 0.62 m

ROAD (0.00 + 48.27 + 0.00) = 48.27 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.66	54.17	0.00	-4.45	-1.46	0.00	0.00	0.00	48.27

Segment Leq : 48.27 dBA

Total Leq All Segments: 48.36 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 55.00
(NIGHT): 48.36

STAMSON 5.0 NORMAL REPORT Date: 03-03-2017 11:36:21
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: CBCPOAB3.te Time Period: Day/Night 16/8 hours
Description: Conservation Dr. and Beaver Creek Rd POAB3

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

Car traffic volume : 11653/1295 veh/TimePeriod *
Medium truck volume : 215/24 veh/TimePeriod *
Heavy truck volume : 84/9 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 4 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 13280
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 1.80
Heavy Truck % of Total Volume : 0.70
Day (16 hrs) % of Total Volume : 90.00

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

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 170.00 / 170.00 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 5586/621 veh/TimePeriod *
Medium truck volume : 28/3 veh/TimePeriod *
Heavy truck volume : 11/1 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 6250

Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 0.50
Heavy Truck % of Total Volume : 0.20
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 2: Beaver Creek (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 27.80 / 27.80 m
Receiver height : 1.50 / 0.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Conservation (day)

Source height = 0.92 m

ROAD (0.00 + 44.40 + 0.00) = 44.40 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 63.36 0.00 -17.50 -1.46 0.00 0.00 0.00 44.40

Segment Leq : 44.40 dBA

Results segment # 2: Beaver Creek (day)

Source height = 0.66 m

ROAD (0.00 + 54.60 + 0.00) = 54.60 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 60.51 0.00 -4.45 -1.46 0.00 0.00 0.00 54.60

Segment Leq : 54.60 dBA

Total Leq All Segments: 55.00 dBA

Results segment # 1: Conservation (night)

Source height = 0.91 m

ROAD (0.00 + 38.71 + 0.00) = 38.71 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.59 56.78 0.00 -16.74 -1.33 0.00 0.00 0.00 38.71

Segment Leq : 38.71 dBA

Results segment # 2: Beaver Creek (night)

Source height = 0.63 m

ROAD (0.00 + 47.98 + 0.00) = 47.98 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 53.89 0.00 -4.45 -1.46 0.00 0.00 0.00 47.98

Segment Leq : 47.98 dBA

Total Leq All Segments: 48.47 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 55.00
(NIGHT): 48.47

STAMSON 5.0 NORMAL REPORT Date: 02-03-2017 15:11:33
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: CBCPOAC3.TE Time Period: Day/Night 16/8 hours
Description: Conservation Dr and Beaver Creek Rd POAC3

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

Car traffic volume : 11653/1295 veh/TimePeriod *
Medium truck volume : 215/24 veh/TimePeriod *
Heavy truck volume : 84/9 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 4 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 13280
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 1.80
Heavy Truck % of Total Volume : 0.70
Day (16 hrs) % of Total Volume : 90.00

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

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 105.00 / 105.00 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 5586/621 veh/TimePeriod *
Medium truck volume : 28/3 veh/TimePeriod *
Heavy truck volume : 11/1 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 6250

Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 0.50
Heavy Truck % of Total Volume : 0.20
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 2: Beaver Creek (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 30.00 / 30.00 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Conservation (day)

Source height = 0.92 m

ROAD (0.00 + 47.88 + 0.00) = 47.88 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 63.36 0.00 -14.03 -1.46 0.00 0.00 0.00 47.88

Segment Leq : 47.88 dBA

Results segment # 2: Beaver Creek (day)

Source height = 0.66 m

ROAD (0.00 + 54.05 + 0.00) = 54.05 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 60.51 0.00 -5.00 -1.46 0.00 0.00 0.00 54.05

Segment Leq : 54.05 dBA

Total Leq All Segments: 54.99 dBA

Results segment # 1: Conservation (night)

Source height = 0.91 m

ROAD (0.00 + 42.03 + 0.00) = 42.03 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.59	56.78	0.00	-13.42	-1.33	0.00	0.00	0.00	42.03

Segment Leq : 42.03 dBA

Results segment # 2: Beaver Creek (night)

Source height = 0.63 m

ROAD (0.00 + 47.73 + 0.00) = 47.73 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	53.89	0.00	-4.80	-1.35	0.00	0.00	0.00	47.73

Segment Leq : 47.73 dBA

Total Leq All Segments: 48.77 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 54.99
(NIGHT): 48.77

Filename: CBCPOAD3.TE Time Period: Day/Night 16/8 hours
Description: Conservation Dr and Beaver Creek Rd POAD3

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

Car traffic volume : 11653/1295 veh/TimePeriod *
Medium truck volume : 215/24 veh/TimePeriod *
Heavy truck volume : 84/9 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 4 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 13280
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 1.80
Heavy Truck % of Total Volume : 0.70
Day (16 hrs) % of Total Volume : 90.00

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

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 60.80 / 60.80 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 5586/621 veh/TimePeriod *
Medium truck volume : 28/3 veh/TimePeriod *
Heavy truck volume : 11/1 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 6250

Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 0.50
Heavy Truck % of Total Volume : 0.20
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 2: Beaver Creek (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 39.00 / 39.00 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Conservation (day)

Source height = 0.92 m

ROAD (0.00 + 51.81 + 0.00) = 51.81 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 63.36 0.00 -10.09 -1.46 0.00 0.00 0.00 51.81

Segment Leq : 51.81 dBA

Results segment # 2: Beaver Creek (day)

Source height = 0.66 m

ROAD (0.00 + 52.16 + 0.00) = 52.16 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 60.51 0.00 -6.89 -1.46 0.00 0.00 0.00 52.16

Segment Leq : 52.16 dBA

Total Leq All Segments: 55.00 dBA

Results segment # 1: Conservation (night)

Source height = 0.91 m

ROAD (0.00 + 45.80 + 0.00) = 45.80 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.59 56.78 0.00 -9.65 -1.33 0.00 0.00 0.00 45.80

Segment Leq : 45.80 dBA

Results segment # 2: Beaver Creek (night)

Source height = 0.63 m

ROAD (0.00 + 45.92 + 0.00) = 45.92 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.60 53.89 0.00 -6.62 -1.35 0.00 0.00 0.00 45.92

Segment Leq : 45.92 dBA

Total Leq All Segments: 48.87 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 55.00
(NIGHT): 48.87

STAMSON 5.0 NORMAL REPORT Date: 02-03-2017 15:44:16
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: CBCPOAE3.TE Time Period: Day/Night 16/8 hours
Description: Conservation Dr and Beaver Creek Rd POAE3

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

Car traffic volume : 11653/1295 veh/TimePeriod *
Medium truck volume : 215/24 veh/TimePeriod *
Heavy truck volume : 84/9 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 4 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 13280
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 1.80
Heavy Truck % of Total Volume : 0.70
Day (16 hrs) % of Total Volume : 90.00

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

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 42.90 / 42.90 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 5586/621 veh/TimePeriod *
Medium truck volume : 28/3 veh/TimePeriod *
Heavy truck volume : 11/1 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 6250

Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 0.50
Heavy Truck % of Total Volume : 0.20
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 2: Beaver Creek (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 85.00 / 85.00 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Conservation (day)

Source height = 0.92 m

ROAD (0.00 + 54.33 + 0.00) = 54.33 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 63.36 0.00 -7.58 -1.46 0.00 0.00 0.00 54.33

Segment Leq : 54.33 dBA

Results segment # 2: Beaver Creek (day)

Source height = 0.66 m

ROAD (0.00 + 46.55 + 0.00) = 46.55 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 60.51 0.00 -12.51 -1.46 0.00 0.00 0.00 46.55

Segment Leq : 46.55 dBA

Total Leq All Segments: 55.00 dBA

Results segment # 1: Conservation (night)

Source height = 0.91 m

ROAD (0.00 + 48.20 + 0.00) = 48.20 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.59	56.78	0.00	-7.25	-1.33	0.00	0.00	0.00	48.20

Segment Leq : 48.20 dBA

Results segment # 2: Beaver Creek (night)

Source height = 0.63 m

ROAD (0.00 + 40.52 + 0.00) = 40.52 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	53.89	0.00	-12.02	-1.35	0.00	0.00	0.00	40.52

Segment Leq : 40.52 dBA

Total Leq All Segments: 48.88 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 55.00
(NIGHT): 48.88

Filename: CBCPOAF3.TE Time Period: Day/Night 16/8 hours
Description: Conservation Dr and Beaver Creek Rd POAF3

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

Car traffic volume : 11653/1295 veh/TimePeriod *
Medium truck volume : 215/24 veh/TimePeriod *
Heavy truck volume : 84/9 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 4 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 13280
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 1.80
Heavy Truck % of Total Volume : 0.70
Day (16 hrs) % of Total Volume : 90.00

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

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 39.10 / 39.10 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 5586/621 veh/TimePeriod *
Medium truck volume : 28/3 veh/TimePeriod *
Heavy truck volume : 11/1 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 6250

Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 0.50
Heavy Truck % of Total Volume : 0.20
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 2: Beaver Creek (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 500.00 / 500.00 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Conservation (day)

Source height = 0.92 m

ROAD (0.00 + 55.00 + 0.00) = 55.00 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 63.36 0.00 -6.91 -1.46 0.00 0.00 0.00 55.00

Segment Leq : 55.00 dBA

Results segment # 2: Beaver Creek (day)

Source height = 0.66 m

ROAD (0.00 + 33.77 + 0.00) = 33.77 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 60.51 0.00 -25.28 -1.46 0.00 0.00 0.00 33.77

Segment Leq : 33.77 dBA

Total Leq All Segments: 55.03 dBA

Results segment # 1: Conservation (night)

Source height = 0.91 m

ROAD (0.00 + 48.84 + 0.00) = 48.84 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.59 56.78 0.00 -6.61 -1.33 0.00 0.00 0.00 48.84

Segment Leq : 48.84 dBA

Results segment # 2: Beaver Creek (night)

Source height = 0.63 m

ROAD (0.00 + 28.23 + 0.00) = 28.23 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.60 53.89 0.00 -24.31 -1.35 0.00 0.00 0.00 28.23

Segment Leq : 28.23 dBA

Total Leq All Segments: 48.88 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 55.03
(NIGHT): 48.88

STAMSON 5.0 NORMAL REPORT Date: 02-03-2017 16:01:15
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: CBCPOAG3.TE Time Period: Day/Night 16/8 hours
Description: Conservation Dr and Beaver Creek Rd (Sg2) POAG3

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

Car traffic volume : 11653/1295 veh/TimePeriod *
Medium truck volume : 215/24 veh/TimePeriod *
Heavy truck volume : 84/9 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 4 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 13280
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 1.80
Heavy Truck % of Total Volume : 0.70
Day (16 hrs) % of Total Volume : 90.00

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

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 200.00 / 200.00 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 6032/670 veh/TimePeriod *
Medium truck volume : 30/3 veh/TimePeriod *
Heavy truck volume : 12/1 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 6750

Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 0.50
Heavy Truck % of Total Volume : 0.20
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 2: Beaver Creek (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 28.75 / 28.75 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Conservation (day)

Source height = 0.92 m

ROAD (0.00 + 43.23 + 0.00) = 43.23 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 63.36 0.00 -18.67 -1.46 0.00 0.00 0.00 43.23

Segment Leq : 43.23 dBA

Results segment # 2: Beaver Creek (day)

Source height = 0.67 m

ROAD (0.00 + 54.70 + 0.00) = 54.70 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 60.84 0.00 -4.69 -1.46 0.00 0.00 0.00 54.70

Segment Leq : 54.70 dBA

Total Leq All Segments: 55.00 dBA

Results segment # 1: Conservation (night)

Source height = 0.91 m

ROAD (0.00 + 37.59 + 0.00) = 37.59 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.59 56.78 0.00 -17.86 -1.33 0.00 0.00 0.00 37.59

Segment Leq : 37.59 dBA

Results segment # 2: Beaver Creek (night)

Source height = 0.62 m

ROAD (0.00 + 48.31 + 0.00) = 48.31 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.60 54.17 0.00 -4.51 -1.35 0.00 0.00 0.00 48.31

Segment Leq : 48.31 dBA

Total Leq All Segments: 48.66 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 55.00
(NIGHT): 48.66

STAMSON 5.0 NORMAL REPORT Date: 02-03-2017 16:41:09
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: ECDPOAH2.TE Time Period: Day/Night 16/8 hours
Description: Conservation Dr and Erbsville Rd POAH2

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

Car traffic volume : 8062/896 veh/TimePeriod *
Medium truck volume : 291/32 veh/TimePeriod *
Heavy truck volume : 458/51 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 9790
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 3.30
Heavy Truck % of Total Volume : 5.20
Day (16 hrs) % of Total Volume : 90.00

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

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 28.91 / 28.91 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 8898/989 veh/TimePeriod *
Medium truck volume : 164/18 veh/TimePeriod *
Heavy truck volume : 64/7 veh/TimePeriod *
Posted speed limit : 100 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): 10140

Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 1.80
Heavy Truck % of Total Volume : 0.70
Day (16 hrs) % of Total Volume : 90.00

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

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 500.00 / 500.00 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Erbsville Rd (day)

Source height = 1.51 m

ROAD (0.00 + 60.00 + 0.00) = 60.00 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 66.19 0.00 -4.73 -1.46 0.00 0.00 0.00 60.00

Segment Leq : 60.00 dBA

Results segment # 2: Conservation (day)

Source height = 0.92 m

ROAD (0.00 + 42.67 + 0.00) = 42.67 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 69.41 0.00 -25.28 -1.46 0.00 0.00 0.00 42.67

Segment Leq : 42.67 dBA

Total Leq All Segments: 60.08 dBA

Results segment # 1: Erbsville Rd (night)

Source height = 1.51 m

ROAD (0.00 + 53.88 + 0.00) = 53.88 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.57 59.66 0.00 -4.47 -1.30 0.00 0.00 0.00 53.88

Segment Leq : 53.88 dBA

Results segment # 2: Conservation (night)

Source height = 0.91 m

ROAD (0.00 + 37.35 + 0.00) = 37.35 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.59 62.86 0.00 -24.18 -1.33 0.00 0.00 0.00 37.35

Segment Leq : 37.35 dBA

Total Leq All Segments: 53.98 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 60.08
(NIGHT): 53.98

STAMSON 5.0 NORMAL REPORT Date: 02-03-2017 17:28:26
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: ECDPOAI2.TE Time Period: Day/Night 16/8 hours
Description: Conservation Dr and Erbsville Rd POAI2

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

Car traffic volume : 8062/896 veh/TimePeriod *
Medium truck volume : 291/32 veh/TimePeriod *
Heavy truck volume : 458/51 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 9790
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 3.30
Heavy Truck % of Total Volume : 5.20
Day (16 hrs) % of Total Volume : 90.00

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

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 31.50 / 31.50 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 8898/989 veh/TimePeriod *
Medium truck volume : 164/18 veh/TimePeriod *
Heavy truck volume : 64/7 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 10140
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 1.80
Heavy Truck % of Total Volume : 0.70
Day (16 hrs) % of Total Volume : 90.00

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

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 56.00 / 56.00 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Erbsville Rd (day)

Source height = 1.51 m

ROAD (0.00 + 59.38 + 0.00) = 59.38 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 66.19 0.00 -5.35 -1.46 0.00 0.00 0.00 59.38

Segment Leq : 59.38 dBA

Results segment # 2: Conservation (day)

Source height = 0.92 m

ROAD (0.00 + 51.23 + 0.00) = 51.23 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 62.19 0.00 -9.50 -1.46 0.00 0.00 0.00 51.23

Segment Leq : 51.23 dBA

Total Leq All Segments: 60.00 dBA

Results segment # 1: Erbsville Rd (night)

Source height = 1.51 m

ROAD (0.00 + 53.30 + 0.00) = 53.30 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.57	59.66	0.00	-5.06	-1.30	0.00	0.00	0.00	53.30

Segment Leq : 53.30 dBA

Results segment # 2: Conservation (night)

Source height = 0.91 m

ROAD (0.00 + 45.21 + 0.00) = 45.21 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.59	55.63	0.00	-9.08	-1.33	0.00	0.00	0.00	45.21

Segment Leq : 45.21 dBA

Total Leq All Segments: 53.93 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 60.00
(NIGHT): 53.93

STAMSON 5.0 NORMAL REPORT Date: 02-03-2017 16:49:45
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: ECDPOAJ2.TE Time Period: Day/Night 16/8 hours
Description: Conservation Dr and Erbsville Rd POAJ2

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

Car traffic volume : 8062/896 veh/TimePeriod *
Medium truck volume : 291/32 veh/TimePeriod *
Heavy truck volume : 458/51 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 9790
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 3.30
Heavy Truck % of Total Volume : 5.20
Day (16 hrs) % of Total Volume : 90.00

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

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 500.00 / 500.00 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 8898/989 veh/TimePeriod *
Medium truck volume : 164/18 veh/TimePeriod *
Heavy truck volume : 64/7 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 10140

Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 1.80
Heavy Truck % of Total Volume : 0.70
Day (16 hrs) % of Total Volume : 90.00

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

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 16.60 / 16.60 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Erbsville Rd (day)

Source height = 1.51 m

ROAD (0.00 + 39.46 + 0.00) = 39.46 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 66.19 0.00 -25.28 -1.46 0.00 0.00 0.00 39.46

Segment Leq : 39.46 dBA

Results segment # 2: Conservation (day)

Source height = 0.92 m

ROAD (0.00 + 60.00 + 0.00) = 60.00 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 62.19 0.00 -0.73 -1.46 0.00 0.00 0.00 60.00

Segment Leq : 60.00 dBA

Total Leq All Segments: 60.04 dBA

Results segment # 1: Erbsville Rd (night)

Source height = 1.51 m

ROAD (0.00 + 34.45 + 0.00) = 34.45 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.57 59.66 0.00 -23.90 -1.30 0.00 0.00 0.00 34.45

Segment Leq : 34.45 dBA

Results segment # 2: Conservation (night)

Source height = 0.91 m

ROAD (0.00 + 53.59 + 0.00) = 53.59 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.59 55.63 0.00 -0.70 -1.33 0.00 0.00 0.00 53.59

Segment Leq : 53.59 dBA

Total Leq All Segments: 53.64 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 60.04
(NIGHT): 53.64

STAMSON 5.0 NORMAL REPORT Date: 02-03-2017 17:11:21
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: ECDPOAK2.TE Time Period: Day/Night 16/8 hours
Description: Conservation Dr and Erbsville Rd POAK2

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

Car traffic volume : 8062/896 veh/TimePeriod *
Medium truck volume : 291/32 veh/TimePeriod *
Heavy truck volume : 458/51 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 9790
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 3.30
Heavy Truck % of Total Volume : 5.20
Day (16 hrs) % of Total Volume : 90.00

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

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 130.00 / 130.00 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 8898/989 veh/TimePeriod *
Medium truck volume : 164/18 veh/TimePeriod *
Heavy truck volume : 64/7 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 10140

Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 1.80
Heavy Truck % of Total Volume : 0.70
Day (16 hrs) % of Total Volume : 90.00

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

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 17.48 / 17.48 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Erbsville Rd (day)

Source height = 1.51 m

ROAD (0.00 + 49.17 + 0.00) = 49.17 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 66.19 0.00 -15.57 -1.46 0.00 0.00 0.00 49.17

Segment Leq : 49.17 dBA

Results segment # 2: Conservation (day)

Source height = 0.92 m

ROAD (0.00 + 59.63 + 0.00) = 59.63 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 62.19 0.00 -1.10 -1.46 0.00 0.00 0.00 59.63

Segment Leq : 59.63 dBA

Total Leq All Segments: 60.00 dBA

Results segment # 1: Erbsville Rd (night)

Source height = 1.51 m

ROAD (0.00 + 43.63 + 0.00) = 43.63 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.57	59.66	0.00	-14.72	-1.30	0.00	0.00	0.00	43.63

Segment Leq : 43.63 dBA

Results segment # 2: Conservation (night)

Source height = 0.91 m

ROAD (0.00 + 53.24 + 0.00) = 53.24 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.59	55.63	0.00	-1.05	-1.33	0.00	0.00	0.00	53.24

Segment Leq : 53.24 dBA

Total Leq All Segments: 53.69 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 60.00
(NIGHT): 53.69

STAMSON 5.0 NORMAL REPORT Date: 03-03-2017 09:40:00
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: ECDPOAI3.TE Time Period: Day/Night 16/8 hours
Description: Erbsville Rd and Conservation Dr. POAI3

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

Car traffic volume : 8062/896 veh/TimePeriod *
Medium truck volume : 291/32 veh/TimePeriod *
Heavy truck volume : 458/51 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 9790
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 3.30
Heavy Truck % of Total Volume : 5.20
Day (16 hrs) % of Total Volume : 90.00

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

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 81.00 / 81.00 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 8898/989 veh/TimePeriod *
Medium truck volume : 164/18 veh/TimePeriod *
Heavy truck volume : 64/7 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 10140

Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 1.80
Heavy Truck % of Total Volume : 0.70
Day (16 hrs) % of Total Volume : 90.00

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

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 55.40 / 55.40 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Erbsville Rd (day)

Source height = 1.51 m

ROAD (0.00 + 52.58 + 0.00) = 52.58 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 66.19 0.00 -12.16 -1.46 0.00 0.00 0.00 52.58

Segment Leq : 52.58 dBA

Results segment # 2: Conservation (day)

Source height = 0.92 m

ROAD (0.00 + 51.31 + 0.00) = 51.31 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 62.19 0.00 -9.42 -1.46 0.00 0.00 0.00 51.31

Segment Leq : 51.31 dBA

Total Leq All Segments: 55.00 dBA

Results segment # 1: Erbsville Rd (night)

Source height = 1.51 m

ROAD (0.00 + 46.86 + 0.00) = 46.86 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.57 59.66 0.00 -11.50 -1.30 0.00 0.00 0.00 46.86

Segment Leq : 46.86 dBA

Results segment # 2: Conservation (night)

Source height = 0.91 m

ROAD (0.00 + 45.28 + 0.00) = 45.28 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.59 55.63 0.00 -9.01 -1.33 0.00 0.00 0.00 45.28

Segment Leq : 45.28 dBA

Total Leq All Segments: 49.15 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 55.00
(NIGHT): 49.15

STAMSON 5.0 NORMAL REPORT Date: 03-03-2017 10:10:13
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: ECDPOAJ3.TE Time Period: Day/Night 16/8 hours
Description: Erbsville Rd and Conservation Dr. POAJ3

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

Car traffic volume : 8062/896 veh/TimePeriod *
Medium truck volume : 291/32 veh/TimePeriod *
Heavy truck volume : 458/51 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 9790
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 3.30
Heavy Truck % of Total Volume : 5.20
Day (16 hrs) % of Total Volume : 90.00

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

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 137.50 / 137.50 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 8898/989 veh/TimePeriod *
Medium truck volume : 164/18 veh/TimePeriod *
Heavy truck volume : 64/7 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 10140

Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 1.80
Heavy Truck % of Total Volume : 0.70
Day (16 hrs) % of Total Volume : 90.00

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

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 39.10 / 39.10 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Erbsville Rd (day)

Source height = 1.51 m

ROAD (0.00 + 48.76 + 0.00) = 48.76 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 66.19 0.00 -15.97 -1.46 0.00 0.00 0.00 48.76

Segment Leq : 48.76 dBA

Results segment # 2: Conservation (day)

Source height = 0.92 m

ROAD (0.00 + 53.82 + 0.00) = 53.82 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 62.19 0.00 -6.91 -1.46 0.00 0.00 0.00 53.82

Segment Leq : 53.82 dBA

Total Leq All Segments: 55.00 dBA

Results segment # 1: Erbsville Rd (night)

Source height = 1.51 m

ROAD (0.00 + 43.25 + 0.00) = 43.25 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.57	59.66	0.00	-15.10	-1.30	0.00	0.00	0.00	43.25

Segment Leq : 43.25 dBA

Results segment # 2: Conservation (night)

Source height = 0.91 m

ROAD (0.00 + 47.69 + 0.00) = 47.69 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.59	55.63	0.00	-6.61	-1.33	0.00	0.00	0.00	47.69

Segment Leq : 47.69 dBA

Total Leq All Segments: 49.02 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 55.00
(NIGHT): 49.02

STAMSON 5.0 NORMAL REPORT Date: 03-03-2017 10:22:04
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: ECDPOAK3.TE Time Period: Day/Night 16/8 hours
Description: Erbsville Rd and Conservation Dr. POAK3

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

Car traffic volume : 8062/896 veh/TimePeriod *
Medium truck volume : 291/32 veh/TimePeriod *
Heavy truck volume : 458/51 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 9790
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 3.30
Heavy Truck % of Total Volume : 5.20
Day (16 hrs) % of Total Volume : 90.00

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

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 71.00 / 71.00 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 8898/989 veh/TimePeriod *
Medium truck volume : 164/18 veh/TimePeriod *
Heavy truck volume : 64/7 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 10140

Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 1.80
Heavy Truck % of Total Volume : 0.70
Day (16 hrs) % of Total Volume : 90.00

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

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 70.50 / 70.50 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Erbsville Rd (day)

Source height = 1.51 m

ROAD (0.00 + 53.53 + 0.00) = 53.53 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 66.19 0.00 -11.21 -1.46 0.00 0.00 0.00 53.53

Segment Leq : 53.53 dBA

Results segment # 2: Conservation (day)

Source height = 0.92 m

ROAD (0.00 + 49.57 + 0.00) = 49.57 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 62.19 0.00 -11.16 -1.46 0.00 0.00 0.00 49.57

Segment Leq : 49.57 dBA

Total Leq All Segments: 55.00 dBA

Results segment # 1: Erbsville Rd (night)

Source height = 1.51 m

ROAD (0.00 + 47.76 + 0.00) = 47.76 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.57 59.66 0.00 -10.60 -1.30 0.00 0.00 0.00 47.76

Segment Leq : 47.76 dBA

Results segment # 2: Conservation (night)

Source height = 0.91 m

ROAD (0.00 + 43.62 + 0.00) = 43.62 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.59 55.63 0.00 -10.67 -1.33 0.00 0.00 0.00 43.62

Segment Leq : 43.62 dBA

Total Leq All Segments: 49.18 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 55.00
(NIGHT): 49.18

STAMSON 5.0 NORMAL REPORT Date: 06-03-2017 11:08:31
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: ECDPOAL3.TE Time Period: Day/Night 16/8 hours
Description: Erbsville Rd. and Conservation Dr. POAH3

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

Car traffic volume : 8062/896 veh/TimePeriod *
Medium truck volume : 291/32 veh/TimePeriod *
Heavy truck volume : 458/51 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 9790
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 3.30
Heavy Truck % of Total Volume : 5.20
Day (16 hrs) % of Total Volume : 90.00

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

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 57.86 / 57.86 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 8898/989 veh/TimePeriod *
Medium truck volume : 164/18 veh/TimePeriod *
Heavy truck volume : 64/7 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 10140
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 1.80
Heavy Truck % of Total Volume : 0.70
Day (16 hrs) % of Total Volume : 90.00

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

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 500.00 / 500.00 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Erbsville Rd (day)

Source height = 1.51 m

ROAD (0.00 + 55.00 + 0.00) = 55.00 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 66.19 0.00 -9.73 -1.46 0.00 0.00 0.00 55.00

Segment Leq : 55.00 dBA

Results segment # 2: Conservation (day)

Source height = 0.92 m

ROAD (0.00 + 35.45 + 0.00) = 35.45 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 62.19 0.00 -25.28 -1.46 0.00 0.00 0.00 35.45

Segment Leq : 35.45 dBA

Total Leq All Segments: 55.05 dBA

Results segment # 1: Erbsville Rd (night)

Source height = 1.51 m

ROAD (0.00 + 49.15 + 0.00) = 49.15 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.57	59.66	0.00	-9.20	-1.30	0.00	0.00	0.00	49.15

Segment Leq : 49.15 dBA

Results segment # 2: Conservation (night)

Source height = 0.91 m

ROAD (0.00 + 30.11 + 0.00) = 30.11 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.59	55.63	0.00	-24.18	-1.33	0.00	0.00	0.00	30.11

Segment Leq : 30.11 dBA

Total Leq All Segments: 49.20 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 55.05
(NIGHT): 49.20

STAMSON 5.0 NORMAL REPORT Date: 03-03-2017 15:20:41
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: ECDPOAM3.TE Time Period: Day/Night 16/8 hours
Description: Erbsville Rd and Conservation Dr POAL3

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

Car traffic volume : 8062/896 veh/TimePeriod *
Medium truck volume : 291/32 veh/TimePeriod *
Heavy truck volume : 458/51 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 9790
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 3.30
Heavy Truck % of Total Volume : 5.20
Day (16 hrs) % of Total Volume : 90.00

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

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 500.00 / 500.00 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 8898/989 veh/TimePeriod *
Medium truck volume : 164/18 veh/TimePeriod *
Heavy truck volume : 64/7 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 10140
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 1.80
Heavy Truck % of Total Volume : 0.70
Day (16 hrs) % of Total Volume : 90.00

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

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 33.75 / 33.75 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Erbsville Rd (day)

Source height = 1.51 m

ROAD (0.00 + 39.46 + 0.00) = 39.46 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 66.19 0.00 -25.28 -1.46 0.00 0.00 0.00 39.46

Segment Leq : 39.46 dBA

Results segment # 2: Conservation (day)

Source height = 0.92 m

ROAD (0.00 + 54.88 + 0.00) = 54.88 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.66 62.19 0.00 -5.85 -1.46 0.00 0.00 0.00 54.88

Segment Leq : 54.88 dBA

Total Leq All Segments: 55.00 dBA

Results segment # 1: Erbsville Rd (night)

Source height = 1.51 m

ROAD (0.00 + 34.45 + 0.00) = 34.45 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.57 59.66 0.00 -23.90 -1.30 0.00 0.00 0.00 34.45

Segment Leq : 34.45 dBA

Results segment # 2: Conservation (night)

Source height = 0.91 m

ROAD (0.00 + 48.70 + 0.00) = 48.70 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
---
-90 90 0.59 55.63 0.00 -5.59 -1.33 0.00 0.00 0.00 48.70

Segment Leq : 48.70 dBA

Total Leq All Segments: 48.86 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 55.00
(NIGHT): 48.86

MTE FILE No: 39502-104-NA1.1

NOISE ASSESSMENT PLAN

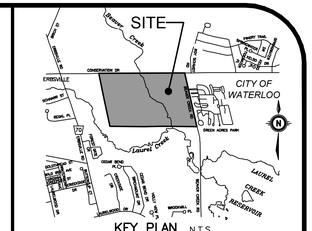
P:\P\39502\104\39502-104-NA1

LEGEND

- SITE BOUNDARY
- SETBACK LINE
- 15m FROM CL
- A3 — POINT OF ASSESSMENT
- NWC TYPE A+C + PROVISIONS FOR A/C
- NWC TYPE B+C + PROVISIONS FOR A/C
- BUILDING COMPONENTS + A/C NWC TYPE B+D

POINT OFF ASSESSMENT	DISTANCE FROM CL OF CONSERVATION DR (m)	DISTANCE FROM CL OF BEAVER CREEK RD (m)
POAA2	52	15
POAB2	30	19.75
POAC2	20.5	61
POAD2	19.53	300
POAA3	500	27.8
POAB3	170	27.8
POAC3	105	30
POAD3	60.8	39
POAE3	42.9	85
POAF3	39.1	500
POAG3	200	28.75

POINT OFF ASSESSMENT	DISTANCE FROM CL OF ERBSVILLE RD (m)	DISTANCE FROM CL OF CONSERVATION DR (m)
POAH2	28.91	500
POAI2	31.5	56
POAJ2	500	16.6
POAK2	130	17.48
POAI3	81	55.4
POAJ3	137.5	39.1
POAK3	71	70.5
POAH3	57.86	500
POAL3	33.75	500



KEY PLAN N.T.S.

GEODETIC BM ELEV. = 349.950m

TABLET SET ON N.E. END OF E. CURB OF CONCRETE BOX CULVERT ON REGIONAL RD. 16 IN ERBSVILLE, 4.9m E. OF CONTRELINE OF REGIONAL RD. 16 32m N.E. OF THE N.E. CORNER OF WHITE FRAME HOUSE, 161m S. OF THE INTERSECTION OF REGIONAL RD. 14 AND 16.

SITE BENCHMARK ELEV. = 351.265m

TOP OF SIB (SEE PLAN FOR LOCATION)

NOTE TO CONTRACTOR :

DO NOT SCALE DRAWINGS.

CONTRACTORS MUST CHECK AND VERIFY ALL DIMENSIONS AND REPORT ANY DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.

ALL DRAWINGS REMAIN THE PROPERTY OF THE ENGINEER AND SHALL NOT BE REPRODUCED OR REUSED WITHOUT THE ENGINEER'S WRITTEN PERMISSION.

THE OWNER/ARCHITECT/CONTRACTOR IS ADVISED THAT M.T.E. CONSULTANTS INC. CANNOT CERTIFY ANY COMPONENT OF THE SITE WORKS NOT INSPECTED DURING CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO NOTIFY M.T.E. CONSULTANTS INC. PRIOR TO COMMENCEMENT OF CONSTRUCTION TO ARRANGE FOR INSPECTION.

No.	REVISION	BY	DATE
8.			
7.			
6.			
5.			
4.			
3.			
2.			
1.	ISSUED FOR DRAFT PLAN SUBMISSION	VAL	JUL/05/17

MTE
Engineers |Scientists |Surveyors
(519) 743-6500 www.mte85.com

OWNER
1017081 ONTARIO LIMITED & GABRIELLA ELIZABETH GROFF/1455136 ONTARIO INC.
675 Riverbend Drive KITCHENER

PROJECT
NORTHGATE AND ERBSVILLE KARTWAY SUBDIVISIONS
CONSERVATION DRIVE WATERLOO

DRAWING
NOISE ASSESSMENT PLAN

Project Manager VAL	Project No. 39502-104
Design By LCM	Checked By VAL
Drawn By SXP/KAT	Checked By
Surveyed By	Drawing No. NA1.1
Date Feb.17/17	
Scale 1:2000	Sheet of

July 5, 2017 — 8:53 a.m. — Plotted By: spejcic