
Appendix M

Noise Report

Environmental Noise Assessment

Class Environmental Assessment for Mayfield Road -- from Chinguacousy Road to Heart Lake Road

JULY 2013

Prepared for:
Region of Peel

Prepared by:
GENIVAR Inc.
600 Cochrane Drive, 5th Floor
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Project No.: 101-17262-00



Project No. 101-17262-00

July 4, 2013

The Regional Municipality of Peel
9445 Airport Road, 3rd Floor
Brampton, ON L6T 4J3

**Attention: Mr. Neal Smith, C.E.T.
Project Manager**

**Re: Environmental Noise Assessment Report
Class Environmental Assessment for Mayfield Road -- from Chinguacousy Road to Heart
Lake Road**

Dear Sir:

Enclosed, please find an Environmental Noise Assessment Report for Mayfield Road from Chinguacousy Road to Heart Lake Road for the necessary action at your end.

The report assesses the noise impacts on the nearby noise sensitive receptors due to the future traffic volume in the year 2031 on the existing and proposed road expansion.

This report is updated from the April 27, 2012 report to account for the new lower speed limits along some sections of Mayfield Road.

If you need any clarification and require any additional information, please, do not hesitate to contact the undersigned at (905) 475 7270 ext 18384.

Yours truly,
GENIVAR Inc.

A handwritten signature in blue ink, appearing to read "Bhuwan Prasad".

Bhuwan Prasad, P. Eng.
Project Engineer

A handwritten signature in blue ink, appearing to read "Elizabeth Tsui".

Elizabeth Tsui, P.Eng.
Environmental Engineer

cc: Bruce Grundon, Director, Municipal Transportation Design, GENIVAR

Executive Summary

GENIVAR Inc. (GENIVAR) conducted an Environmental Noise Assessment for Mayfield Road from Chinguacousy Road to Heart Lake Road, in the city of Brampton/Town of Caledon (Project #10-4350), as part of the Municipal Class Environmental Assessment (EA) Study, to meet the expansion needs of the Study Area in accordance with the Official Transportation Plan.

Mayfield Road is located on the boundary of Brampton and Caledon within the Region of Peel. The length of Mayfield Road within the Study Area is approximately 5.8 km. The existing corridor has 12 intersections, of which eight are signalized and four are unsignalized.

For the Horizon Year of 2021: (i) between Chinguacousy Road and Hurontario Street, Mayfield Road will be widened to 4-lanes and (ii) between Hurontario Street and Heart Lake Road, Mayfield Road will be widened to 6-lanes. For the Horizon Year of 2031, (i) between Chinguacousy Road and Hurontario Street, Mayfield Road will be widened ultimately to 6-lanes and (ii) between Hurontario Street and Heart Lake Road, Mayfield Road will maintain the 6-lanes built in 2021.

The modeling of future sound level conditions was performed using the Ontario Ministry of the Environment (MOE) approved acoustical modeling software, STAMSON. This report documents the noise impacts at the nearby noise sensitive receivers due to vehicular traffic on the existing and proposed road in the future Horizon Year of 2031.

The sound level criteria employed are based on the Ministry of the Environmental and Region of Peel applicable regulatory criteria for traffic noise.

Forty one (41) receptor locations were modeled to determine the “2031 No-Build” and “2031 Build-Out” sound levels.

The forecasted outdoor living area noise levels were in the range of 59 to 70 dBA for both cases and the differences between the “2031 No-Build” and “2031 Build-Out” sound levels did not exceed 5 dBA level for any of the receptors. As such, under the MTO/MOE Joint Noise Protocol, noise mitigation is not warranted for this project.

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1. Introduction

GENIVAR Inc. (GENIVAR) conducted an Environmental Noise Assessment as part of the Municipal Class Environmental Assessment (EA) Study for the proposed expansion of Mayfield Road from Chinguacousy Road to Heart Lake Road, an east-west arterial road that forms the boundary line between the City of Brampton and the Town of Caledon. Mayfield Road is currently a two-lane road west of Hurontario Street and a four-lane road east of Hurontario Street. The Study Area is shown on Figure 1 below.



Figure 1 Mayfield Road from Chinguacousy to Heart Lake Road Study Area

The length of Mayfield Road within the Study Area is approximately 5.8 km. The existing corridor has twelve (12) intersections, of which eight (8) are signalized and four (4) are unsignalized.

All Regional of Peel capital works planning studies are using the year 2021 or year 2031 as the Horizon Year.

For the Horizon Year of 2021: (i) between Chinguacousy Road and Hurontario Street, Mayfield Road will be widened to 4-lanes (2 lanes in each direction) and (ii) between Hurontario Street and Heart Lake Road, Mayfield Road will be widened to 6-lanes (3 lanes in each direction).

For the Horizon Year of 2031: (i) between Chinguacousy Road and Hurontario Street, Mayfield Road will be widened ultimately to 6-lanes (3 lanes in each direction) and (ii) between Hurontario Street and Heart Lake Road, Mayfield Road will maintain the 6-lanes built in 2021 (3 lanes in each direction).

2. Applicable Transportation Noise Guidelines

2.1 Ontario Provincial Guidelines

For the assessment of noise impact under this project, reliance is made on the MTO/MOE Joint Noise Protocol, "A Protocol for Dealing Concerns during the Preparation, Review and Evaluation of Provincial Highways Environmental Assessments", February 1986.

According to the MTO/MOE Joint Protocol, the future "Build-Out" sound levels are predicted to increase by less than 5 dBA ten years after completion of the project over the future "No-Build" sound levels, no noise mitigation is required. If they are to increase more than 5 dBA and the future "Build-Out" sound level is more than 55 dBA, an investigation of noise mitigation measures within the roadway right-of-way should be performed.

Off right-of-way mitigation, such as acoustically enhancement of windows and/or doors and/or wall and/or central air conditioning, etc., are not within the scope of this assessment. Roadway right-of-way mitigation measures include barriers, sound reducing asphalts, and changes in vertical profiles and horizontal alignments. Noise mitigation measures when required should be designed to achieve the future "2031 No-Build" sound level or 55 dBA whichever is greater, if technically, administratively and economically feasible. Mitigation requirements under Ontario Provincial Guidelines for this project are summarized in Table 1 below.

Table 1 Summary of Mitigation Effort

Change in Noise Level Above Ambient	Mitigation Effort Requirement
0 to 5 dBA	<ul style="list-style-type: none"> • None
≥ 5 dBA	<ul style="list-style-type: none"> • Investigate noise mitigation measures on right-of-way • Introduce noise control measures within the right-of-way if technically, administratively and economically feasible • When applied, noise mitigation measures should achieve a minimum of 5 dBA reduction, over first row receivers • Try to mitigate close to ambient sound levels where administratively, economically, and technically feasible

2.2 Region of Peel Guide for Noise

For the noise impact assessment undertaken in this project, the criteria from "General Guidelines for the Preparation of Acoustical Reports in the Region of Peel", December 2002 has also been followed. The applicable sections from this guideline are within the section "2.0 Noise Prediction and Design Criteria", such as "2.1 Sound Level Limits", "2.2 Traffic Noise Predictions" and "2.3 Noise Barrier Calculations".

Most of the criteria are similar to the MTO/MOE Joint Noise Protocol as discussed in section 2.1. However, Region of Peel Guidelines also requires sound levels for nighttime (11 p.m. – 7 a.m.) period to be evaluated.

3. Location of Noise Sensitive Areas

3.1 Characterization of Noise Sensitive Areas

Noise Sensitive Areas (NSAs) include specific land uses, provided they have an “Outdoor Living Area” (OLA) associated with them. Outdoor Living Area is the part of an outdoor area easily accessible from the building and intended for the quiet enjoyment of the outdoor environment. The term OLA is generally used in reference to an outdoor patio, a backyard, a terrace, or other area where passive recreation is expected to occur.

Small balconies are not considered OLAs for the purposes of noise assessment. Terraces greater than 4 m in depth, measured perpendicular to the building façade, are considered to be OLAs. In general, the following OLAs are considered NSAs:

- Private Dwellings: Individual family units and townhouses
- High-rise buildings such as apartments having a common OLA
- Educational facilities and daycare centres with OLAs for students
- Hospitals and nursing homes with OLAs for patients
- Campgrounds for providing overnight accommodation
- Hotels and motels with outdoor common OLAs (such as, swimming pools) for visitors

In addition, the MOE also considers places of worship, such as, churches as NSAs.

3.2 Future Land Uses within Project Area

Future residential developments have not been included in this noise assessment. If new residences are developed subsequent to the expansion of the roads, it is the responsibility of the developer of these residences to provide noise mitigation measures, if warranted.

3.3 Representative NSAs for Analysis

The sensitive receptors, such as residences, are shown on Figure F1 and Figure F2. Instead of assessing noise impacts at each individual receptor, only few receptors have been considered for each cluster of receptors which would be similarly impacted by the nearby network of roads. A total of forty one (41) receptor locations were chosen for this noise analysis.

For the purpose of this analysis, Mayfield Road is sub-divided into sections between two adjacent intersections. The receptors are labeled according to the section ID and whether they are located on the north or south side of Mayfield Road.

For the outdoor location area for the residences, the suggested receiver height of 1.5 metres is taken for noise modeling.

3.4 Location and Numbers of NSAs within Project Area

For this project, the Study Area includes the area north and south of Mayfield Road and east and west of the roads perpendicular to the Mayfield Road. Representative noise sensitive receptors have been identified and shown on Figure F1 to Figure F4, attached in Figure Section and details are provided below.

- One (1) residence, west of Chinguacousy Road and north of Mayfield Road (R1)
- One (1) residence, east of New Collector Road and north of Mayfield Road (R2)
- Three (3) residences, east of New Collector Road and south of Mayfield Road (R3)
- Two (2) residences, west of McLaughlin Road and north of Mayfield Road (R4)
- Residential subdivision between McLaughlin Road and Van Kirk Road, south of Mayfield Road (R5 to R7).

- One (1) residence, between McLaughlin Road and Van Kirk Road and north of Mayfield Road (R8)
- Elementary school east of Van Kirk Road and north of Mayfield Road (R10)
- Residential subdivision between Van Kirk Road and the railway and south of Mayfield Road (R9 and R11)
- Residential subdivision between the railway and Robertson Davis Drive and north of Mayfield Road (R12-R14)
- Residential subdivision between Robertson Davis Drive/Cresthaven Road and Hurontario Street on both sides of Mayfield Road (R15 to R20)
- Residential subdivision between Robertson Davies Drive and Hurontario Street on both sides of Mayfield Road
- One (1) single dwelling, east of Colonel Bertram Rd and south of Mayfield Road (R22)
- Residential subdivision between Hurontario Street and near Summer Valley Dr and north of Mayfield Road (R21 and R23 to R24)
- Residences along between Summer Valley Drive and Valley View Road and north of Mayfield Road (R26).
- Residential area along Valley View Road and south of Mayfield Road (R25)
- Residential area along Infer Heights Drive and south of Mayfield Road (R27 to R30)
- Residence northwest of Kennedy Road and Mayfield Road (R31).
- Residential subdivision between Kennedy Road and east of Stonegate Road and south of Mayfield Road (R32 to R30)
- Two (2) residential dwellings, east of Stonegate Road and north of Mayfield Road (R40)
- One (1) single dwelling, west of Heart Lake Road and south of Mayfield Road (R41)

4. Road Traffic Data

4.1 Existing Traffic Volume

The “existing” traffic data (average of 2005 and 2009 AADT) for Mayfield Road and adjoining roads for the Study Area was obtained from the *Traffic Report for Class Environmental Assessment for Mayfield Road from Chinguacousy Road to Heart Lake Road*, August 2011 by GENIVAR and summarised in Table T1.

4.2 “2031 No-Build” Traffic Volume

Future “2031 No-Build” traffic projections for the roadway network were determined by applying cumulative percent annual growth on existing traffic data (average of 2005 and 2009 AADT) as per Section 4.1, given above. Three (3)% annual growth factor was applied for Mayfield Road and two (2)% was applied on the intersecting streets for estimating “2031 No-Build” traffic volume by the following relationship:

$AADT_{(n+k)} = AADT_{(n)} \times (1 + r)^k$, where **n** is the current year, **r** is annual growth factor and **k** is the projected future year

The calculated traffic volume is summarised in Table T1 as attached in Table Section.

4.3 “2031 Build-Out” Traffic Volume

The “2031 Build-Out” AM and PM AADT Peak Hour Link Volume were obtained from the above Traffic Report. These volumes have been used to estimate the “2031 Build-Out” AADT volume according to the following relationships:

Estimated 2031 AADT (east bound and west bound calculated as separate segment for model input):

- (AM Peak Hour Link Volume + PM Peak Hour Link Volume) x 5.76 for Mayfield Road
- (AM Peak Hour Link Volume + PM Peak Hour Link Volume) x 5.55 for north-south crossing roadways.

4.4 Speed Limit

The present speed limit on Mayfield Road are 80 km/h from Chinguacousy Road to approximately 300 metres west of Hurontario Street, 60 km/h from 300 metres west of Hurontario Street to approximately 300 metres west of Heart Lake Road and 80 km/h from 300 metres west of Heart Lake Road to Heart Lake Road. The speed limit on various sections of Mayfield Road and the intersecting roads are summarised in Table T1.

Most of the existing speed limit of the present roads will remain the same even after expansion of the roads with the exception of the length approximately between McLaughlin Road and Hurontario Street, and near Heart Lake Road, as illustrated in Figure 2:

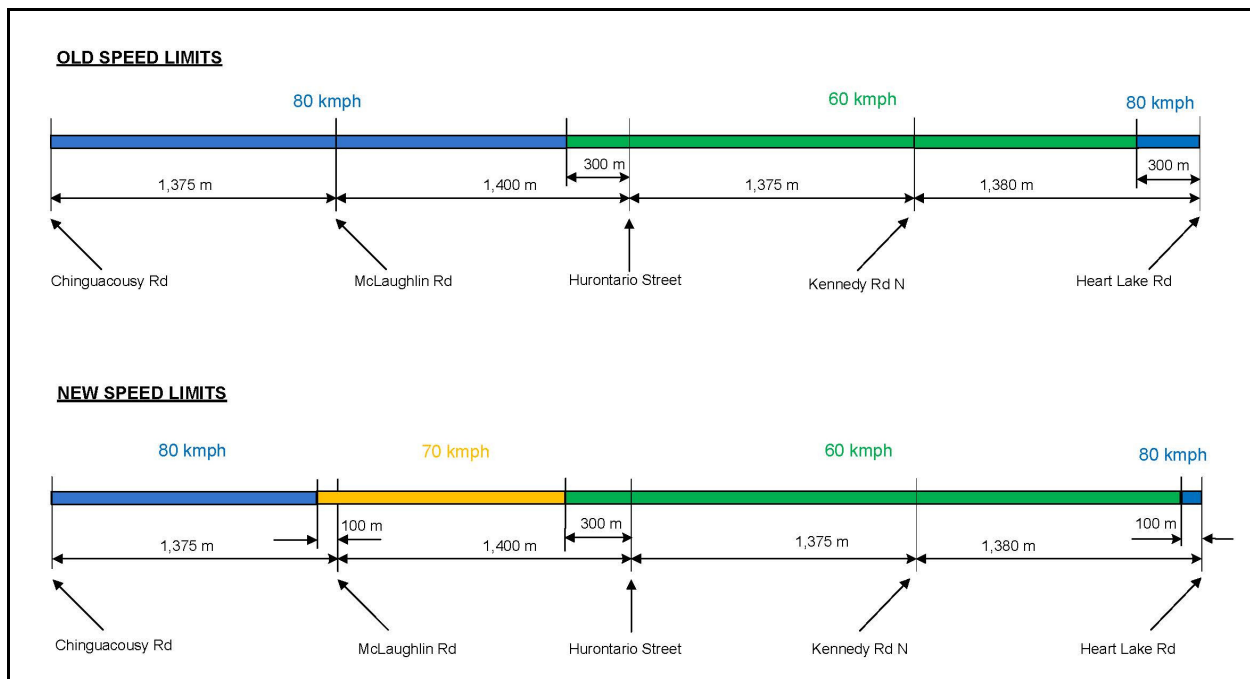


Figure 2 Speed Limits

4.5 Day/Night Split

A split of 92% – 8% day-night traffic volume was used for all the section of the roads in the project and is summarised in Table T1.

4.6 Vehicle Classification

For noise impact assessment, vehicular traffics are classified into three different types: automobiles, medium trucks and heavy trucks.

Automobiles are classified as motorized vehicles, comprised of two (2) axles and four (4) wheels, meant for the transportation of a maximum of nine (9) passengers, light trucks for transportation of cargo, and motorcycles.

Medium trucks, two (2) axles and six (6) wheels, are designed for transportation of cargo and have a gross vehicle weight (GVW) between 4500 and 12,000 kg.

Heavy trucks, three (3) or more axles, are designed for transportation of cargo with a gross vehicle weight of more than 12,000 kg.

Vehicle percentages split is based on the Region of Peel Guidelines, which suggests taking 5.5% for medium trucks and 4.5 % for heavy trucks for all the roads, if actual counts are not available.

The vehicle volume percentage splits for various sections of the roads are summarized in Table T1.

4.7 Signalized Intersections

Signalized intersections result in “stop and go” vehicular activities and as a result, increase noise levels in the vicinity of the intersection.

Depending upon other features such as topography, design road speed, etc., traffic signals generally affect sound levels within about 150 metres of the intersection. A NSA within 60 metres of an intersection may experience 2 dBA higher noise while within 60 to 150 metres, an NSA may experience an increase of 1 dBA.

New signals are proposed at New Collector Roads 1 and 2 between Chinguacousy & McLaughlin and at Van Kirk Drive at 2031 build out.

However, for this study, the impact of signalized intersections has been taken into account as there impacts would be minimal.

5. Noise Impact Assessment Methodology

This noise evaluation was carried out in order to determine the overall impact of transportation noise due to existing roads and proposed realignment for the projected traffic volume for the year 2031. Suggested mitigation measures, if any, would be incorporated into the site design to meet regulatory criteria.

5.1 Noise Model

The Ontario Road Noise Analysis Method (ORNAMENT), developed by the Ontario Ministry of the Environment, was used to assess the potential noise impacts.

ORNAMENT was applied using the computer software program STAMSON to predict sound levels generated from road sources in the outdoor living area of NSAs. The program considers variables such as traffic volumes, percentage of trucks, distance from roadway, roadway grade, posted speed limit, topography, barriers and vegetation. Sound levels were predicted for both the future 2031 No-Build and future 2031 Build-Out cases.

Sound levels are predicted in decibels on the A-weighted (dBA) scale, which best approximates the human perception of sound over a specified time period. In accordance with the MOE Guidelines, the 16-hour equivalent daytime and 8-hour equivalent nighttime sound levels were calculated using the STAMSON noise software program..

In addition to traffic volume, vehicle split and truck percentage, the following STAMSON input variables were considered for the calculation of future sound levels:

- Topography (hills, flat lands)
- The intermediate ground surface (hard surface reflects sound, soft surface absorbs sound)
- Distance, in metres, from source to receptor, using the centreline of the road (or road segment) as the source
- The angle at which the receptor intercepts the source (roadway), measured relative to the perpendicular line between the source and the receptor
- Receptor height of 1.5 metres for the OLA

- Roadway grade or slope

5.2 Existing Barriers

There are some existing noise barriers (fences, berms and combination thereof) within the project Study Area. Example of noise barriers are shown on photographs as given on Figures 3, 4 and 5 on the following pages. The location of these noise barriers are shown on Figure F2 to Figure F4 in the Figure Section. For the purpose of the assessment, these noise barriers were not included as part of the model inputs as the relative difference between “2031 No-Build” and “2031 Build-Out” should be similar.



Figure 3 Wooden fence constructed on an elevated slope, viewed from Mayfield Road.



Figure 4 Noise Barrier along south side of Mayfield Road, west of Stonegate Drive.



Figure 5 Noise Barrier along south side of Mayfield Road at Stonegate Drive.

6. Noise Impact Assessment

Under the applicable MOE and MTO guidelines, the assessment is conducted by comparing future “2031 Build-Out” sound levels (i.e., 2031 Horizon Year with the project in place) versus future “2031 No-Build” sound levels (i.e., 2031 Horizon Year without the project). Table T2 presents a comparison of daytime OLA sound levels for both of these conditions without mitigation. Sample STAMSON model output is attached in Appendix A.

The noise impact evaluation has been summarized for daytime and nighttime receptors.

The sound level changes of 0 to less than 3 dBA are considered acoustically insignificant, while the changes from 3 to less than 5 dBA are considered acoustically noticeable.

The results predict that none of the representative NSA show changes in sound levels from “2031 Build-Out” to “2031 No-Build” greater than 5 dBA. Therefore, under the MTO/MOE Joint Noise Protocol, noise mitigation measures are not warranted for any location within the Study Area.

As a matter of fact, some of the “2031 Build-Out” sound levels are lower than “2031 No-Build” sound levels signifying that lane widening helps in smooth flow of traffic as AADTs increases over the years and consequently noise impact lessens.

7. CONSTRUCTION NOISE

Unlike the noise emitted by the operation of vehicles on the proposed expanded road, noise due to construction of roads is temporary in nature, and largely unavoidable. The noise impact levels during construction depends upon size and number of pieces of equipment being used, their types, time of operation and their proximity with the NSAs. However, with adequate controls, noise impacts can be minimized even though for some periods of time and types of work, construction sound levels will be perceptible. The following construction activities are anticipated for this project:

- Modification of existing surface pavements;
- Construction and rehabilitation of the base course;
- Addition of new lane(s);

- Paving and repaving of the roadway surface; and
- Rock drilling and blasting of new in-cuts; etc.

Recommendations relating to the management of construction noise are summarized below.

- The contractor should obtain copies of the latest noise control by-laws from the local Municipalities of jurisdiction where the project roadways pass through. Where adherence of the local by laws is not possible and mitigation is not feasible, an exemption should be obtained from the municipality before the start of construction work.
- The MOE stipulates limits on sound emissions from various equipment used in the construction. Sound emission standards for the various types of construction equipment used on the project should be checked to ensure that they meet the specified limits contained in MOE Publication NPC-115 – “Construction Equipment”. As such, all construction equipment should be operated with effective muffling devices that are in good working condition.
- Unnecessary noise emission by faulty or non-operating components of equipment should be minimized by regular maintenance of the equipment. Idling of construction equipment should be restricted to the least minimum time necessary to complete any specific task.
- Should the municipality receive any complaint from the public, the municipality staff will verify that the "general noise control measures" agreed to, are in effect. The municipality will investigate any noise concerns, warn the contractor of any problems and enforce its contract.

If the "general noise control measures" are complied with, but if public noise complaints arise during construction, the municipality will require the contractor to comply with the MOE sound level criteria for construction equipment contained in the MOE's Model Municipal Noise Control By-Law. Subject to the results of a field investigation, alternative noise control measures may be required, where these are reasonably available.

In selecting the appropriate construction noise control and mitigation measures, the municipality will give consideration to the technical, administrative, and economic feasibility of the various alternatives.

The above noted procedures are based on the construction noise provisions included in Section 8 of the MOE/MTO Noise Protocol.

8. Conclusions

GENIVAR conducted an environmental noise assessment for Mayfield Road from Chinguacousy Road to Heart Lake Road (Project #10-4350), as part of the Municipal Class Environmental Assessment (EA) Study, to meet the expansion needs of the Study Area in accordance with the Official Transportation Plan.

The modeling of future noise level conditions was performed using the Ontario MOE approved acoustical modeling software, STAMSON. This report documents the noise assessment and analysis for the nearby receivers due to impacts of the traffic on the existing and proposed road networks for the projected traffic volume for the year 2031.

Forty one (41) receptor locations were modeled to determine the “2031 No-Build” and “2031 Build-Out” sound levels. The forecasted outdoor living area (OLA) sound levels were in the range of 59 to 70 dBA for both cases and the differences between the “2031 No-Build” and “2031 Build-Out” noise levels did not exceed 5 dBA level. As such, noise mitigation is not warranted for any receptors within the Study Area under the MTO/MOE Joint Noise Protocol.

9. References

MTO/MOE, "A Protocol for Dealing with Noise Concerns during the Preparation, Review and Evaluation of Provincial Highways Environmental Assessments", February 1986

Ontario Ministry of the Environment. STAMSON v5.04. "Noise Assessment and Systems Support Unit." c. 1996.

Tables



Table T1 2031 "No-Build" and "Build-Out" Traffic Data

Receiver Site	Receiver Property Usages	Address	Receptor Relative to Corresponding Road	Road Name	2031 No-Build			2031 Build-Out						Speed Limit for No-Build (km/h)	Speed Limit for Build (km/h)	Day/Night Split	Medium Trucks (%) (3)	Heavy Trucks (%) (3)	
					Number of Lanes	AADT (Veh/day) (1)	OLA Distance to Center of Road (m)	Number of Lanes	West Bound		East Bound		Intersecting Road						
									AADT (Veh/day) (2)	OLA Distance to Center of Road (m)	AADT (Veh/day) (2)	OLA Distance to Center of Road (m)	AADT (Veh/day) (2)						OLA Distance to Center of Road (m)
R1	Residential	Chinguacousy Rd (4)	N	Mayfield Road	2	18,800	34.2	6	14,500	28.6	15,750	39.8			80	80	92-8	5.5	4.5
			W	Chinguacousy	2	4,700	56.9	4	3,100		3,350		5350	56.9			80	80	
R2	Residential	Mayfield Rd (4)	N	Mayfield Road	2	18,800	54.6	6	16,700	49.2	17,800	60.4			80	80	92-8	5.5	4.5
R3	Residential	2257 Mayfield Rd	S	Mayfield Road	2	18,800	30.8	6	16,700	36.2	17,800	25.0			80	80	92-8	5.5	4.5
R4	Residential	2412 Mayfield Rd	N	Mayfield Road	2	18,800	127.3	6	17,000	121.9	18,300	133.1			80	75	92-8	5.5	4.5
R5	Residential	35 Accent Cir	S	Mayfield Road	2	23,000	81.3	6	18,100	85.4	18,700	74.2			80	70	92-8	5.5	4.5
			E	McLaughlin Rd	2	7,400	76.0	4	3,300		3,300		4500	76.0				80	80
R6	Residential	61 Accent Cir	S	Mayfield Road	2	23,000	75.1	6	20,300	78.2	19,500	66.9			80	70	92-8	5.5	4.5
R7	Residential	518 Van Kirk Dr	S	Mayfield Road	2	23,000	54.2	6	20,300	57.7	19,500	46.4			80	70	92-8	5.5	4.5
R8	Residential	2596 Mayfield Rd	N	Mayfield Road	2	23,000	40.8	6	20,850	37.4	20,300	48.7			80	70	92-8	5.5	4.5
R9	Residential	151 Iceland Poppy Trail	S	Mayfield Road	2	23,000	28.3	6	20,850	32.5	20,300	21.3			80	70	92-8	5.5	4.5
R10	School	2626 Mayfield Rd	N	Mayfield Road	2	23,000	107.6	6	21,400	103.5	21,100	114.7			80	70	92-8	5.5	4.5
R11	Residential	104 Iceland Poppy Trail	S	Mayfield Road	2	23,000	49.3	6	21,400	54.2	21,100	43.0			80	70	92-8	5.5	4.5
R12	Residential	24 Twin Willow Cres	N	Mayfield Road	2	27,700	52.3	6	21,550	46.9	21,850	58.1			80	70	92-8	5.5	4.5
R13	Residential	16 Twin Willow Cres	N	Mayfield Road	4	27,700	42.9	6	21,550	37.4	21,850	48.6			80	80	92-8	5.5	4.5
R14	Residential	8 Twin Willow Cres	N	Mayfield Road	2	27,700	46.3	6	21,700	40.4	22,600	51.7			80 (5)	70	92-8	5.5	4.5
R15	Residential	104 Sunridge St	N	Mayfield Road	2	27,700	53.9	6	21,400	47.5	21,100	58.8			80	70	92-8	5.5	4.5
			E	Robertson Davies Drive/ Cresthaven Rd	2	3,700	19.5	2	3,700		3,300		6900	19.5				50	50
R16	Residential	6 Brimmer Pl	S	Mayfield Road	2	27,700	31.0	6	21,550	35.9	21,850	24.6			80	70	92-8	5.5	4.5
			E	Robertson Davies Drive/ Cresthaven Rd	2	3,700	35.8		2,400		2,300					50		50	5.5
R17	Residential	88 Sunridge St	N	Mayfield Road	2	27,700	34.2	6	21,700	26.9	22,600	38.1			80 (5)	65	92-8	5.5	4.5
R18	Residential	60 Sunridge St	N	Mayfield Road	2	23,000	37.2	6	20,300	29.8	19,500	41.1			60	65	92-8	5.5	4.5
R19	Residential	34 Lawlor Crt	N	Mayfield Road	2	27,700	29.9	6	21,700	22.5	22,600	33.7			60	60	92-8	5.5	4.5
			W	Hurontario St	4	29,800	70.8	4	14,100		13,700		27800	70.8				70	70
R20	Residential	2933 Mayfield Rd	S	Mayfield Road	2	27,700	36.1	6	21,700	43.5	22,600	32.2			80 (5)	65	92-8	5.5	4.5
R21	Residential	36 Woodcreek Dr	N	Mayfield Road	2	27,700	78.7	6	21,700	71.1	22,600	82.3			60	60	92-8	5.5	4.5
			E	Hurontario St	4	29,800	104.9	4	14,100		13,700		27800	104.9				70	70
R22	Residential	3085 Mayfield Rd	S	Mayfield Road	4	42,800	43.8	6	22,900	51.5	22,600	40.2			60	60	92-8	5.5	4.5
R23	Residential	3151 Mayfield Rd	S	Mayfield Road	4	42,800	36.3	6	45,100	44.1	45,100	32.9			60	60	92-8	5.5	4.5
R24	Residential	3142 Mayfield Rd	N	Mayfield Road	4	42,800	33.1	6	22,850	25.2	22,450	36.5			60	60	92-8	5.5	4.5
R25	Residential	3203 Mayfield	S	Mayfield Road	2/4	42,800	37.7	6	45,100	45.7	45,100	34.4			60	60	92-8	5.5	4.5
R26	Residential	Mayfield Rd (4)	N	Mayfield Road	4	42,800	46.3	6	45,100	40.6	45,100	51.9			60	60	92-8	5.5	4.5

Receiver Site	Receiver Property Usages	Address	Receptor Relative to Corresponding Road	Road Name	2031 No-Build			2031 Build-Out						Speed Limit for No-Build (km/h)	Speed Limit for Build (km/h)	Day/Night Split	Medium Trucks (%) (3)	Heavy Trucks (%) (3)	
					Number of Lanes	AADT (Veh/day) (1)	OLA Distance to Center of Road (m)	Number of Lanes	West Bound		East Bound		Intersecting Road						
									AADT (Veh/day) (2)	OLA Distance to Center of Road (m)	AADT (Veh/day) (2)	OLA Distance to Center of Road (m)	AADT (Veh/day) (2)						OLA Distance to Center of Road (m)
R27	Residential	20 Ravinder Crt	S	Mayfield Road	4	42,800	66.2	6	45,100	71.7	45,100	60.5			60	60	92-8	5.5	4.5
R28	Residential	24 Ravinder Crt	S	Mayfield Road	2/4	42,800	44.0	6	45,100	50.1	45,100	38.9			60	60	92-8	5.5	4.5
R29	Residential	1 Inder Heights Dr	S	Mayfield Road	2	49,200	67.0	6	22,000	76.1	22,100	64.9			60	60	92-8	5.5	4.5
R30	Residential	3367 Mayfield Rd	S	Mayfield Road	2	43,400	51.5	6	23,050	61.9	22,600	50.7			60	60	92-8	5.5	4.5
R32	Residential	14 Starling Crt	S	Mayfield Road	2	44,200	115.5	6	22,350	125.2	22,250	114.0			60	60	92-8	5.5	4.5
			E	Kennedy Road	4	9,500	38.6		9,400		8,350				60	60		5.5	4.5
R33	Residential	10 Kingfisher Crt	S	Mayfield Road	2	44,200	45.1	6	22,350	56.8	22,250	45.5			60	60	92-8	5.5	4.5
			E	Kennedy Road	4	9,500	116.2	4	9,400		8,350		17750	116.2	60	60		5.5	4.5
R34	Residential	22 Kingfisher Crt	S	Mayfield Road	2/4	42,800	37.1	6	45,100	50.7	45,100	39.4			60	60	92-8	5.5	4.5
R35	Residential	30 Kingfisher Crt	S	Mayfield Road	2	44,900	35.1	6	21,400	48.8	21,600	37.5			60	60	92-8	5.5	4.5
R36	Residential	16 Sandpiper Crt	S	Mayfield Road	2	44,900	37.6	6	21,400	51.3	21,600	40.0			60	60	92-8	5.5	4.5
R37	Residential	18 Stonegate Dr	S	Mayfield Road	2	47,100	28.9	6	21,700	42.6	21,850	31.3			60	60	92-8	5.5	4.5
R38	Residential	2 Chickadee Cres	S	Mayfield Road	2	49,200	22.2	6	22,000	35.8	22,100	24.6			60	60	92-8	5.5	4.5
R39	Residential	12 Chickadee Cres	S	Mayfield Road	2	49,200	41.6	6	22,000	55.0	22,100	43.7			60	60	92-8	5.5	4.5
R40	Residential	3742 Mayfield Rd	N	Mayfield Road	2	49,200	64.9	6	22,000	52.0	22,100	63.2			60	60	92-8	5.5	4.5
R41	Residential	11900 Heart Lake Rd	S	Mayfield Road	2	49,200	90.8	6	22,000	93.7	22,100	82.4			80	70	92-8	5.5	4.5
			W	Heart Lake Road	2	5,100	32.7	4	5,050		4,950		18250	32.7	75	75		5.5	4.5

Notes

- Three (3) % annual growth factor was used for traffic volumes on Mayfield Road and 2% was applied on the intersecting streets for estimating "2031 No-Build" traffic volume
- Estimated 2031 AADT = (AM Peak Hour Link Volume + PM Peak Hour Link Volume) x 5.76 for Mayfield; (AM Peak Hour Link Volume + PM Peak Hour Link Volume x 5.55 for intersecting roads
- Split between medium to heavy truck as per General Guidelines for the Preparation of Acoustical Reports in the Region of Peel Section 2.0 Noise Prediction and Design Criteria
- Exact Address not available
- The speed limit on Mayfield Road is 80 km/h from Chinguacousy Road to approximately 300 m west of Hurontario Street, 60 km/h from 300 m west of Hurontario Street to approximately 300 m west of Heart Lake Road and 80 km/h from 300m west of Heart Lake Road to Heart Lake Road

Table T2 - Predicted Future (2031) Sound Levels

Receiver Site	Receiver Property Usages	Address	Receptor Relative to Corresponding Road	Road Name	Daytime Sound Level (dBA)			Night time Sound Level (dBA)		
					2031 No-Build	2031 Build-Out	Change (1)	2031 No-Build	2031 Build-Out	Change (1)
R1	Residential	Chinguacousy Rd (2)	N	Mayfield Road	66.07	68.21	2.14	58.49	60.61	2.12
			W	Chinguacousy						
R2	Residential	Mayfield Rd (2)	N	Mayfield Road	62.25	64.94	2.69	54.67	57.34	2.67
R3	Residential	2257 Mayfield Rd	S	Mayfield Road	66.38	69.43	3.05	58.80	61.83	3.03
R4	Residential	2412 Mayfield Rd	N	Mayfield Road	56.15	58.89	2.74	48.57	51.29	2.72
R5	Residential	35 Accent Cir	S	Mayfield Road	61.59	62.07	0.48	54.02	54.47	0.45
			E	McLaughlin Rd						
R6	Residential	61 Accent Cir	S	Mayfield Road	60.83	62.33	1.50	53.24	54.73	1.49
R7	Residential	518 Van Kirk Dr	S	Mayfield Road	63.18	64.78	1.60	55.59	57.18	1.59
R8	Residential	2596 Mayfield Rd	N	Mayfield Road	65.23	66.37	1.14	57.64	58.77	1.13
R9	Residential	151 Iceland Poppy Trail	S	Mayfield Road	67.87	69.98	2.11	60.28	62.38	2.10
R10	School	2626 Mayfield Rd	N	Mayfield Road	58.24	59.66	1.42	50.65	52.06	1.41
R11	Residential	104 Iceland Poppy Trail	S	Mayfield Road	63.87	65.58	1.71	56.27	57.98	1.71
R12	Residential	24 Twin Willow Cres	N	Mayfield Road	64.25	65.09	0.84	56.66	57.51	0.85
R13	Residential	16 Twin Willow Cres	N	Mayfield Road	65.68	66.59	0.91	58.09	59.00	0.91
R14	Residential	8 Twin Willow Cres	N	Mayfield Road	65.13	66.15	1.02	57.54	58.55	1.01
R15	Residential	104 Sunridge St	N	Mayfield Road	65.20	66.49	1.29	57.59	58.90	1.31
			E	Robertson Davies Drive/ Cresthaven Rd						
R16	Residential	6 Brimmer Pl	S	Mayfield Road	68.21	69.46	1.25	60.62	61.88	1.26
			E	Robertson Davies Drive/ Cresthaven Rd						
R17	Residential	88 Sunridge St	N	Mayfield Road	67.31	68.16	0.85	59.72	60.55	0.83
R18	Residential	60 Sunridge St	N	Mayfield Road	63.39	68.16	4.77	55.80	60.55	4.75
R19	Residential	34 Lawlor Crt	N	Mayfield Road	67.07	69.30	2.23	59.48	61.69	2.21
			W	Hurontario St						
R20	Residential	2933 Mayfield Rd	S	Mayfield Road	66.92	66.35	-0.57	59.33	58.74	-0.59
R21	Residential	36 Woodcreek Dr	N	Mayfield Road	61.60	62.83	1.23	54.01	55.22	1.21
			E	Hurontario St						
R22	Residential	3085 Mayfield Rd	S	Mayfield Road	64.91	64.99	0.08	57.31	57.37	0.06
R23	Residential	3151 Mayfield Rd	S	Mayfield Road	66.26	69.28	3.02	58.66	61.68	3.02
R24	Residential	3142 Mayfield Rd	N	Mayfield Road	66.93	68.02	1.09	59.33	60.42	1.09
R25	Residential	3203 Mayfield	S	Mayfield Road	65.99	68.99	3.00	58.39	61.13	2.74
R26	Residential	Mayfield Rd (2)	N	Mayfield Road	64.51	67.89	3.38	56.91	60.29	3.38
R27	Residential	20 Ravinder Crt	S	Mayfield Road	61.93	65.25	3.32	54.33	57.64	3.31
R28	Residential	24 Ravinder Crt	S	Mayfield Road	64.88	68.18	3.30	57.28	60.58	3.30
R29	Residential	1 Inder Heights Dr	S	Mayfield Road	62.45	61.67	-0.78	54.85	54.08	-0.77
R30	Residential	3367 Mayfield Rd	S	Mayfield Road	63.80	63.47	-0.33	56.20	55.86	-0.34
R31	Residential	Kennedy Rd (2)	N	Mayfield Road	65.26	66.27	1.01	57.66	58.66	1.00
			W	Kennedy Road						
R32	Residential	14 Stirling Crt	S	Mayfield Road	61.72	61.62	-0.10	54.12	54.02	-0.10
			E	Kennedy Road						

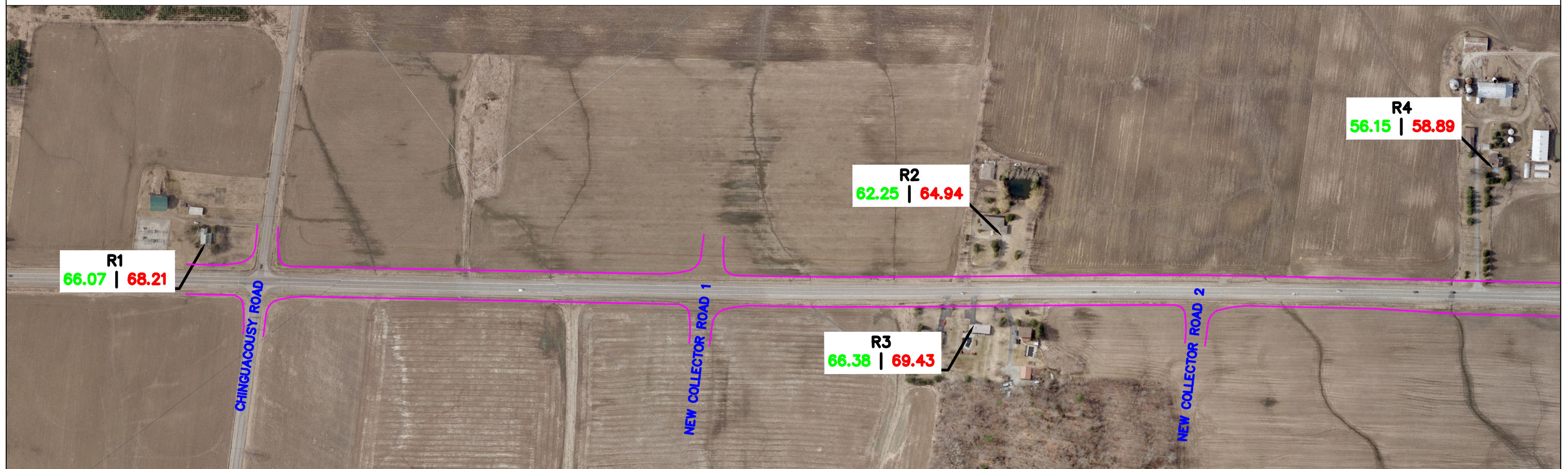
Receiver Site	Receiver Property Usages	Address	Receptor Relative to Corresponding Road	Road Name	Daytime Sound Level (dBA)			Night time Sound Level (dBA)		
					2031 No-Build	2031 Build-Out	Change (1)	2031 No-Build	2031 Build-Out	Change (1)
R33	Residential	10 Kingfisher Crt	S	Mayfield Road	65.03	64.49	-0.54	57.43	56.89	-0.54
			E	Kennedy Road						
R34	Residential	22 Kingfisher Crt	S	Mayfield Road	66.11	68.09	1.98	58.51	60.49	1.98
R35	Residential	30 Kingfisher Crt	S	Mayfield Road	66.71	65.21	-1.50	59.12	57.61	-1.51
R36	Residential	16 Sandpiper Crt	S	Mayfield Road	66.22	64.78	-1.44	58.63	57.19	-1.44
R37	Residential	18 Stonegate Dr	S	Mayfield Road	68.32	66.44	-1.88	60.73	58.84	-1.89
R38	Residential	2 Chickadee Cres	S	Mayfield Road	70.41	68.06	-2.35	62.81	60.46	-2.35
R39	Residential	12 Chickadee Cres	S	Mayfield Road	65.89	64.31	-1.58	58.29	56.72	-1.57
R40	Residential	3742 Mayfield Rd	N	Mayfield Road	62.68	63.15	0.47	55.08	55.56	0.48
R41	Residential	11900 Heart Lake Rd	S	Mayfield Road	63.00	66.74	3.74	55.38	59.15	3.77
			W	Heart Lake Road						

Notes

- 1 Change = "2031 Build-Out" Sound Level - "2031 No-Build" Sound Level
- 2 Exact Address not available

Figures





LEGEND:		Receptor ID
2031 No-Build Sound Level	R1 66.07 68.21	2031 Build-Out Sound Level
Future Alignment Existing Noise Barrier Existing Wood Fence		

GENIVAR
 600 Cochrane Drive, 5th Floor,
 Markham, Ontario L3R 5K3
 Tel: 905.475.7270 Fax: 905.475.5994

SCALE:	NTS
PROJECT NO.:	101-17262-00
DATE:	July 3, 2013
Drawn by:	E.T.
Approved by:	B.P.

Daytime Sound Level at Receptors in dBA From West of Chinguacousy Rd to McLaughlin Rd		FIGURE: F1
Environmental Noise Assessment		
Class Environmental Assessment for Mayfield Road -- from Chinguacousy Road to Heart Lake Road		

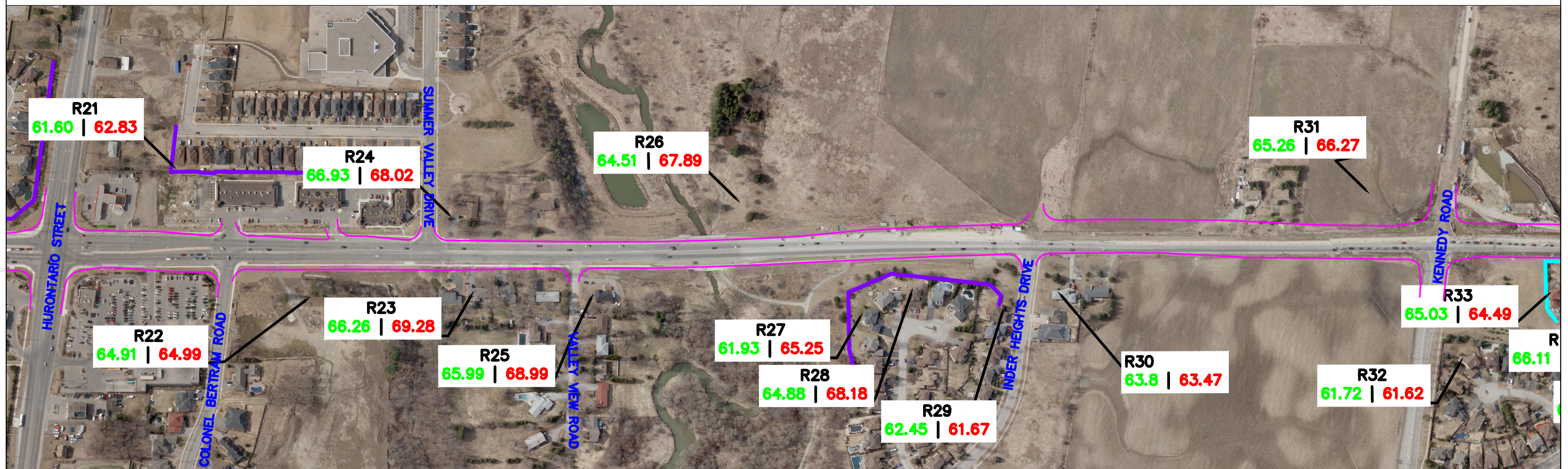


LEGEND:		Receptor ID
2031 No-Build Sound Level	2031 Build-Out Sound Level	
Future Alignment Existing Noise Barrier Existing Wood Fence		

GENIVAR
 600 Cochrane Drive, 5th Floor,
 Markham, Ontario L3R 5K3
 Tel: 905.475.7270 Fax: 905.475.5994

SCALE:	NTS
PROJECT NO.:	101-17262-00
DATE:	July 3, 2013
Drawn by:	E.T.
Approved by:	B.P.

Daytime Sound Level at Receptors in dBA From to McLaughlin Rd to Hurontario St	
Environmental Noise Assessment	
Class Environmental Assessment for Mayfield Road	
-- from Chinguacousy Road to Heart Lake Road	
FIGURE:	F2

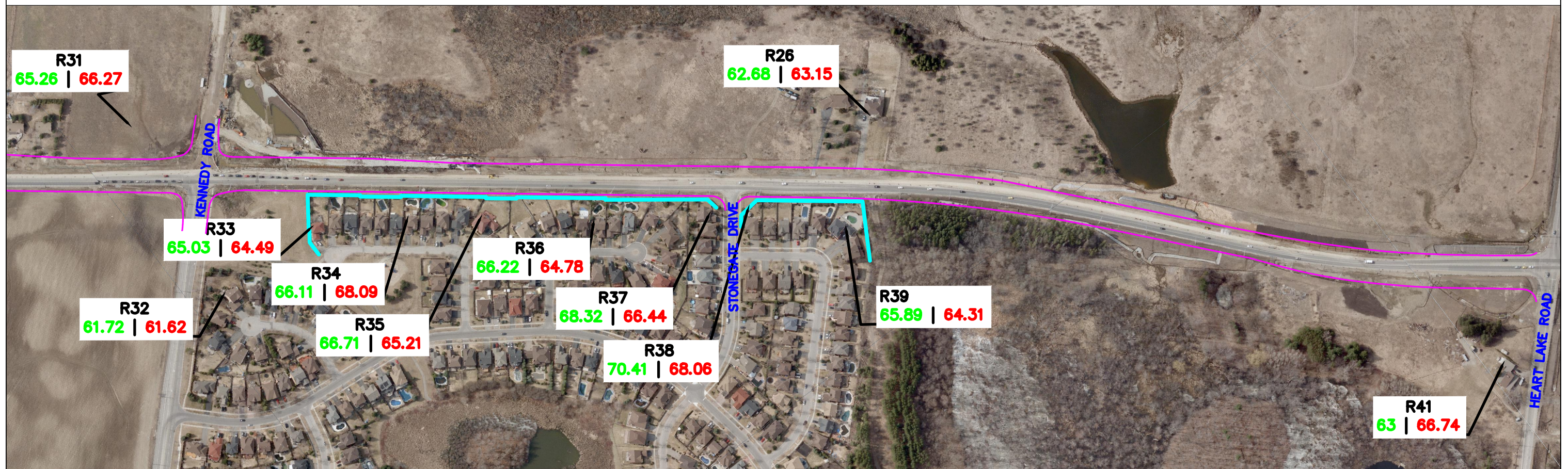


LEGEND:		Receptor ID						
	Future Alignment	<table border="1"> <tr> <td>2031 No-Build Sound Level</td> <td>R1</td> <td>2031 Build-Out Sound Level</td> </tr> <tr> <td>66.07</td> <td>68.21</td> <td></td> </tr> </table>	2031 No-Build Sound Level	R1	2031 Build-Out Sound Level	66.07	68.21	
2031 No-Build Sound Level	R1		2031 Build-Out Sound Level					
66.07	68.21							
	Existing Noise Barrier							
	Existing Wood Fence							

GENIVAR
 600 Cochrane Drive, 5th Floor,
 Markham, Ontario L3R 5K3
 Tel: 905.475.7270 Fax: 905.475.5994

SCALE:	NTS
PROJECT NO.:	101-17262-00
DATE:	July 3, 2013
Drawn by:	E.T.
Approved by:	B.P.

Daytime Sound Level at Receptors in dBA From Hurontario St to Kennedy Rd		FIGURE: F3
Environmental Noise Assessment		
Class Environmental Assessment for Mayfield Road -- from Chinguacousy Road to Heart Lake Road		



LEGEND:		Receptor ID		
2031 No-Build Sound Level	<table border="1"> <tr> <td>R1</td> <td>66.07 68.21</td> </tr> </table>	R1	66.07 68.21	2031 Build-Out Sound Level
R1	66.07 68.21			
	Future Alignment			
	Existing Noise Barrier			
	Existing Wood Fence			

GENIVAR
 600 Cochrane Drive, 5th Floor,
 Markham, Ontario L3R 5K3
 Tel: 905.475.7270 Fax: 905.475.5994

SCALE:	NTS
PROJECT NO.:	101-17262-00
DATE:	July 3, 2013
Drawn by:	E.T.
Approved by:	B.P.

Daytime Sound Level at Receptors in dBA From Kennedy Rd to Heart Lake Rd	
Environmental Noise Assessment	
Class Environmental Assessment for Mayfield Road	
-- from Chinguacousy Road to Heart Lake Road	
FIGURE:	F4

Appendix A

Sample STAMSON Output



STAMSON 5.0 NORMAL REPORT Date: 08-04-2012 08:22:14
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: 1.te Time Period: Day/Night 16/8 hours
 Description:

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

 Car traffic volume : 15566/1354 veh/TimePeriod *
 Medium truck volume : 951/83 veh/TimePeriod *
 Heavy truck volume : 778/68 veh/TimePeriod *
 Posted speed limit : 80 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 18800
 Percentage of Annual Growth : 0.00
 Number of Years of Growth : 0.00
 Medium Truck % of Total Volume : 5.50
 Heavy Truck % of Total Volume : 4.50
 Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: Mayfield Roa (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 : 34.20 / 34.20 m
 Receiver height : 1.50 / 1.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

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

 Car traffic volume : 3892/338 veh/TimePeriod *
 Medium truck volume : 238/21 veh/TimePeriod *
 Heavy truck volume : 195/17 veh/TimePeriod *
 Posted speed limit : 80 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 4700
 Percentage of Annual Growth : 0.00
 Number of Years of Growth : 0.00

Medium Truck % of Total Volume : 5.50
 Heavy Truck % of Total Volume : 4.50
 Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 2: Chinguacousy (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 : 56.90 / 56.90 m
 Receiver height : 1.50 / 1.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Results segment # 1: Mayfield Roa (day)

 Source height = 1.46 m

ROAD (0.00 + 65.63 + 0.00) = 65.63 dBA
 Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

 -90 90 0.66 73.03 0.00 -5.94 -1.46 0.00 0.00 0.00 65.63

Segment Leq : 65.63 dBA

Results segment # 2: Chinguacousy (day)

 Source height = 1.46 m

ROAD (0.00 + 55.94 + 0.00) = 55.94 dBA
 Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

 -90 90 0.66 67.01 0.00 -9.61 -1.46 0.00 0.00 0.00 55.94

Segment Leq : 55.94 dBA

Total Leq All Segments: 66.07 dBA

Results segment # 1: Mayfield Roa (night)

 Source height = 1.46 m

ROAD (0.00 + 58.05 + 0.00) = 58.05 dBA
 Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

-90 90 0.66 65.44 0.00 -5.94 -1.46 0.00 0.00 0.00 58.05

Segment Leq : 58.05 dBA

Results segment # 2: Chinguacousy (night)

Source height = 1.46 m

ROAD (0.00 + 48.36 + 0.00) = 48.36 dBA

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

-90 90 0.66 59.43 0.00 -9.61 -1.46 0.00 0.00 0.00 48.36

Segment Leq : 48.36 dBA

Total Leq All Segments: 58.49 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 66.07
(NIGHT): 58.49

STAMSON 5.0 COMPREHENSIVE REPORT Date: 06-04-2012 17:43:30
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: 1n.te Time Period: Day/Night 16/8 hours
 Description:

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

 Car traffic volume : 12006/1044 veh/TimePeriod *
 Medium truck volume : 734/64 veh/TimePeriod *
 Heavy truck volume : 600/52 veh/TimePeriod *
 Posted speed limit : 80 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 14500
 Percentage of Annual Growth : 0.00
 Number of Years of Growth : 0.00
 Medium Truck % of Total Volume : 5.50
 Heavy Truck % of Total Volume : 4.50
 Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: W Mayfield (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 : 28.60 / 28.60 m
 Receiver height : 1.50 / 1.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

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

 Car traffic volume : 13041/1134 veh/TimePeriod *
 Medium truck volume : 797/69 veh/TimePeriod *
 Heavy truck volume : 652/57 veh/TimePeriod *
 Posted speed limit : 80 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 15750
 Percentage of Annual Growth : 0.00
 Number of Years of Growth : 0.00

Medium Truck % of Total Volume : 5.50
 Heavy Truck % of Total Volume : 4.50
 Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 2: E Mayfield (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 : 39.80 / 39.80 m
 Receiver height : 1.50 / 1.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

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

 Car traffic volume : 4430/385 veh/TimePeriod *
 Medium truck volume : 271/24 veh/TimePeriod *
 Heavy truck volume : 221/19 veh/TimePeriod *
 Posted speed limit : 80 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 5350
 Percentage of Annual Growth : 0.00
 Number of Years of Growth : 0.00
 Medium Truck % of Total Volume : 5.50
 Heavy Truck % of Total Volume : 4.50
 Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 3: Chinguacousy (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 : 56.90 / 56.90 m
 Receiver height : 1.50 / 1.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Segment # 1: W Mayfield (day)

 Source height = 1.46 m

ROAD (0.00 + 65.79 + 0.00) = 65.79 dBA

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

-90 90 0.66 71.90 0.00 -4.65 -1.46 0.00 0.00 0.00 65.79

Segment Leq : 65.79 dBA

Segment # 2: E Mayfield (day)

Source height = 1.46 m

ROAD (0.00 + 63.77 + 0.00) = 63.77 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

-90 90 0.66 72.26 0.00 -7.03 -1.46 0.00 0.00 0.00 63.77

Segment Leq : 63.77 dBA

Segment # 3: Chinguacousy (day)

Source height = 1.46 m

ROAD (0.00 + 56.50 + 0.00) = 56.50 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

-90 90 0.66 67.56 0.00 -9.61 -1.46 0.00 0.00 0.00 56.50

Segment Leq : 56.50 dBA

Total Leq All Segments: 68.21 dBA

Segment # 1: W Mayfield (night)

Source height = 1.46 m

ROAD (0.00 + 58.19 + 0.00) = 58.19 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

-90 90 0.66 64.30 0.00 -4.65 -1.46 0.00 0.00 0.00 58.19

Segment Leq : 58.19 dBA

Segment # 2: E Mayfield (night)

Source height = 1.46 m

ROAD (0.00 + 56.18 + 0.00) = 56.18 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

-90 90 0.66 64.67 0.00 -7.03 -1.46 0.00 0.00 0.00 56.18

Segment Leq : 56.18 dBA

Segment # 3: Chinguacousy (night)

Source height = 1.45 m

ROAD (0.00 + 48.89 + 0.00) = 48.89 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

-90 90 0.66 59.96 0.00 -9.61 -1.46 0.00 0.00 0.00 48.89

Segment Leq : 48.89 dBA

Total Leq All Segments: 60.61 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 68.21
(NIGHT): 60.61

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TO:	Bruce Grundon	DATE:	September 7, 2011
FROM:	Charlene Buske, P.Eng Andrew Harte, EIT	PROJECT NO.:	101-17262
PROJECT:	Mayfield Environmental Assessment		
SUBJECT:	Coarse Screening – Noise Impacts		

To assist in the evaluation and selection of the preliminary planning solutions for the Mayfield Road Environmental Assessment, we have prepared the following memo to address the potential noise impacts.

The evaluation of the noise impacts is qualitative in nature, comparing each alternative relative to each other. The alternatives were measured as follow:





-  Poor in comparison to other alternatives
- Moderate in comparison to other alternatives
-  Good in comparison to other alternatives

Table 1 – Noise Impacts Evaluation for Preliminary Planning Solutions

Alternative	Ranking
1 – Do Nothing	- <ul style="list-style-type: none"> - Traffic will reach capacity on Mayfield Road, with sound levels increasing slightly with congestions (idling) and stop and go traffic (acceleration and truck braking) noise. - Existing sound mitigation may be satisfactory for future conditions. - Does not address goal of study.
2 – Improve Transportation Systems Management	 <ul style="list-style-type: none"> - Efficiencies garnered from increased management of the existing transportation system would not increase the existing sound level. - If TSM cannot match the projected traffic growth, congestion (idling) and stop and go traffic (acceleration and truck braking) sound levels may increase slightly along Mayfield Rd.
3 – Improve Travel Demand Management	 <ul style="list-style-type: none"> - Shifting the modal share on the existing road network will not increase sound levels. - If TDM cannot match the projected traffic growth, congestion (idling) and stop and go traffic (acceleration and truck braking) noise may increase slightly along Mayfield Rd.

Alternative	Ranking
4 – Increase Capacity to Parallel Roadways	<p style="text-align: center;">x</p> <ul style="list-style-type: none"> - Sound levels will increase on parallel roadways - Increased capacity on roadways to the south will be primarily through residential areas. These neighbourhoods are well established (circa 1960-70) and it may be difficult to adequately mitigate the increased noise. - New development areas situated north of Mayfield Road should have approved noise studies accounting for future sound levels, requiring minimal or no mitigation. - The rural areas north of Mayfield Road will experience a significant increase in noise levels, with extensive mitigation required to maintain the current quality of life.
5 – Increase Capacity of Mayfield Road	<p style="text-align: center;">-</p> <ul style="list-style-type: none"> - Sound levels will increase in relation to the traffic increase. - Existing mitigation may be adequate or require minimal improvement to maintain existing quality of life - Areas without mitigation will have to be analyzed to determine if future sound levels will require mitigation. - New development on the north side of Mayfield Road and along the western limits of the project can be planned to mitigate future sound levels.

This evaluation is specifically related to the noise impacts of the preliminary planning solutions. Further refinement of the impacts and mitigation required will be possible once Mayfield Road widening/alignment alternatives have been finalized, should that be the preferred planning solution carried forward. A detailed noise analysis will be completed at that time.

This preliminary evaluation will be included in the broader scope of the project and form one of many components of the alternative solutions selection process.