Environmental Noise Feasibility Study

Snell's Hollow Secondary Plan

Proposed Residential Subdivision

Town of Caledon

July 8, 2021
Project: 119-0388

Prepared for

Snell's Hollow Developers Group

Prepared by

Brett Lipson, M.Eng., EIT

Reviewed by

LICENSED PROFESSIONAL ENGINEER
07/08/2021
S. NAGARAJ
100197435
PROVINCE OF ONTARIO

Seema Nagaraj, Ph.D., P.Eng.

VALCOUSTICS
Canada Ltd.

Version History

Version #	Date	Comments
1.0	July 8, 2021	Final – Issued to Client

TABLE OF CONTENTS

…/cont'd

TABLE OF CONTENTS (continued)

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

Environmental Noise Feasibility Study

Snell's Hollow Secondary Plan

Proposed Residential Subdivision

Town of Caledon

EXECUTIVE SUMMARY

Valcoustics Canada Ltd. (VCL) was retained to prepare an Environmental Noise Feasibility Study addressing the potential noise impacts onto the proposed residential development. The proposed development will consist of multiple blocks for low density residential (detached, semi-detached and street townhouses), medium density residential (dual-frontage and back-to-back townhouses), medium-high density residential (townhouses and apartments) and one block for commercial uses.

The noise sources considered in this study are road traffic, air traffic and stationary noise sources in the area.

The sound levels on site have been determined and compared with the applicable Ministry of the Environment, Conservation and Parks (MECP), Region of Peel and Town of Caledon noise guideline limits to determine the need for noise mitigation.

To meet the noise guideline limits:

- Mandatory air conditioning is required for dwellings in the low and medium density blocks in proximity to Highway 410, Mayfield Road and Kennedy Road. The specific locations of the dwellings requiring air conditioning are shown in Figures 3A to 3C;
- The provision for adding air conditioning at a later date is required at all remaining dwellings in the low and medium density blocks;
- Upgraded exterior wall construction meeting Sound Transmission Class (STC) 54 and upgraded windows with ratings up to STC 35 are recommended at the dwellings in the low and medium density blocks closest to Highway 410 and Mayfield Road. The specific locations of these dwellings are shown in Figures 3A to 3C;
- For all other dwellings, exterior wall construction meeting STC 37 and exterior windows with ratings up to STC 30 are expected to be sufficient to meet the indoor noise criteria;
- The STC ratings above were calculated using assumed (typical) room dimensions and wall and window areas. Exterior wall and window STC requirements should be checked once detailed building plans are available;

- The minimum sound barrier height requirements are:
  - For the dwellings backing onto Highway 410:
    - 3.6 m high at the westernmost block;
    - 3.7 m at the central block; and
    - 3.0 m at the block east of Heart Lake Road.
  - 1.8 m to 2.8 m high for the dwellings at the northwest corner of Mayfield Road and Heart Lake Road.
  - 1.8 m high for several of the lots along the internal roadways.
  - See Figures 3A to 3C for the locations of the sound barriers.
- Plans are not yet available for the proposed medium-high density and commercial blocks within the development. These blocks must be designed to comply with the MECP transportation and stationary noise source guideline limits. Detailed noise studies of these blocks should be done as a condition of site plan approval.

1.0 INTRODUCTION

VCL has been retained to prepare an Environmental Noise Feasibility Study for the proposed residential development in support of the Official Plan Amendment (OPA) application submission to the Town of Caledon and the Regional Municipality of Peel.

The potential sound levels from the environmental noise sources have been predicted on site and compared to the applicable MECP, Region of Peel and Town of Caledon noise guideline limits. Where sound level excesses above these guideline limits occur, noise mitigation measures have been recommended.

1.1 THE SITE AND SURROUNDING AREA

The site is located at the northeast quadrant of the Mayfield Road and Kennedy Road intersection, in the Town of Caledon. The site is bounded by:

- Highway 410 with vacant land zoned for industrial uses and an existing elementary school beyond, to the north;
- Highway 410, with existing agricultural land beyond, to the east;
- Mayfield Road, with existing detached residential dwellings, Solocrete General Contracting Ltd., the North Brampton Pumping Station and Heart Lake Conservation Park beyond, to the south; and
- Kennedy Road, with existing detached residential dwellings beyond, to the west.

A Key Plan is included as Figure 1.

This report was prepared using the Preliminary Development Concept Plan, prepared by Glen Schnarr & Associates Inc., dated December 16, 2020. The Preliminary Development Concept Plan showing the block densities and dwelling types is included as Figure 2.

1.2 THE PROPOSED DEVELOPMENT

The proposed development will consist of low density residential (detached, semi-detached and street townhouses), medium density residential (dual-frontage and back-to-back townhouses), medium-high density residential (townhouses and apartments) and one block for commercial uses. The dwellings in the low-density blocks will be two storeys, the dwellings in the medium density blocks will be three storeys and the buildings in the medium-high density blocks may be up to eight storeys.

The dwellings in the low-density blocks (detached, semi-detached and street townhouses) will be provided with grade-level rear yard amenity space. There will be no grade-level outdoor amenity space associated with the medium density dwellings. Balconies or terraces may be provided for these units.

Since the site plans for the medium-high density and commercial blocks have not yet been established, specific noise control requirements cannot be determined. General noise control requirements are outlined in Section 6.0. Specific noise control requirements can be determined as part of the Site Plan Approval process for these blocks.

2.0 NOISE SOURCES

There are a number of noise sources in the area that could impact the proposed residential development. These include both transportation and stationary sources of noise.

2.1 TRANSPORTATION NOISE SOURCES

2.1.1 Road Traffic

The roadways with the potential to impact the site are Mayfield Road, Kennedy Road, Heart Lake Road and Highway 410, including the ramps on and off Highway 410. Traffic volumes on other surrounding roadways are anticipated to be low and are not expected to create a significant noise impact on the subject site.

The road traffic data correspondence is included as Appendix A and is summarized in Table 1.

2.1.2 Highway 410

Ultimate traffic volumes for Highway 410 were obtained from the Ministry of Transportation (MTO). Both ultimate AADT and SADT were provided. As recommended by the MTO, the higher SADT volume was used in the analysis. A day/night split of 67%/33% was assumed. Heavy and medium trucks were assumed to be 75% and 25%, respectively, of the total truck volume provided, as recommended by the MTO for freeways.

2.1.3 Mayfield Road, Kennedy Road, Heart Lake Road and Highway 410 Ramps

For Mayfield Road, Kennedy Road, Heart Lake Road and the Highway 410 ramps:

- Ultimate traffic volume, truck percentages and the day/night split for Mayfield Road were obtained from the Region of Peel.

- Kennedy Road and Heart Lake Road are municipal roads. The Town of Caledon stated that traffic counts for these roads are not available.
- NexTrans Consulting Engineers (NexTrans), the traffic consultant retained for this project, provided information for Mayfield Road, Kennedy Road, Heart Lake Road and the Highway 410 ramps. The information provided by NexTrans is:
  - Future (year 2033) peak hour turning movement count (TMC) data. The 24-hour volume was calculated by multiplying the higher of either the AM or PM peak hour volume by 10. Future (year 2041) traffic volumes were calculated by escalating the 2033 volumes using a growth rate of 2%, compounded annually;
  - Year 2016 and 2018 TMC data that includes information on truck traffic ("Heavy %"). NexTrans confirmed that "Heavy %" represents the total percentage of trucks (i.e. includes both medium and heavy trucks) and that the split between heavy and medium trucks can be assumed to be 40% and 60%, respectively. The truck percentages were assumed to apply over the full 24 hours.
- The day/night splits used in the analysis are:
  - 86%/14% for Mayfield Road, as provided by the Region of Peel;
  - 90%/10% (assumed) for Kennedy Road and Heart Lake Road, as is typical for well-travelled roadways;
  - 67%/33% for the Highway 410 ramps (assumed to be the same as Highway 410).

For Mayfield Road, since traffic information is available from the two sources noted above, to be conservative, the higher of the ultimate traffic volume provided by the Region or the 2041 24-hour volume (as calculated from the TMC using the procedure above) was used to complete the assessment. The truck percentages provided by the Region of Peel were used since they provided data for both the daytime and nighttime periods. Note that the daytime truck percentages provided by the Region are higher than the calculated percentages from the TMC (counted during the daytime hours only).

2.1.4 Aircraft Traffic

The site lies outside the NEF 25 contours for Lester B. Pearson International Airport and Brampton Caledon Airport. Thus, in accordance with NPC-300 requirements, noise from aircraft has not been considered further.

2.2 STATIONARY NOISE SOURCES

The existing stationary noise sources in the vicinity of the site are:

- Saint-Jean-Boscois Catholic Elementary School is located at 55 Abbotside Way, approximately 250 m north of the subject site. The main noise source at this facility is the rooftop mechanical equipment. Due to distance separation and the ambient sound level from road traffic on Highway 410, noise from this facility is not expected to impact the subject site.
- The Solocrete General Contracting Ltd. facility is located at 4045 Mayfield Road, approximately 80 m south of the subject site at the southeast corner of Mayfield Road and Heart Lake Road. The main noise sources at this facility are anticipated to be vehicle

movements and equipment maintenance activities on site. Our site observations indicate that the vehicle movements and maintenance activities primarily occur in the yard (behind the buildings on the property). Noise emissions from the facility were not audible at the time of our site visit. Preliminary acoustical modelling of this facility also indicates that the MECP sound level limits will be met at the subject site. Thus, this facility was not considered further in this assessment.

- The North Brampton Pumping Station is located at 4134 Mayfield Road, approximately 80 m south of the subject site. During a site visit by VCL staff, an exhaust stack and air intake/exhaust louvres, likely for an indoor emergency generator, and two exhaust fans were observed. The stack is located at the south end of the roof, farthest away from the subject site. The louvres are located on the west facade, at the south side of the building, and face toward a hill. The exhaust fans are located toward the north and south ends of the roof. Noise emissions from the facility were not audible at the time of our site visit (although the generator was likely not operating at the time). Preliminary acoustical modelling of this facility also indicates that the MECP sound level limits will be met at the subject site. Thus, this facility was not considered further in this assessment.

The site visit was done by VCL staff on March 10, 2021.

The vacant land to the north of Highway 410 is zoned for industrial use. The subject site is currently zoned A1 and EPA2, both of which allow detached dwellings. Any industrial facility developed on the vacant land north of Highway 410 must be designed to comply with the MECP noise guideline limits at the surrounding residential uses, including the subject site, even if this redevelopment did not occur. Thus, the responsibility to comply with the stationary noise guideline limits rests with the future industrial uses and they have not been considered further in this assessment.

3.0 ENVIRONMENTAL NOISE GUIDELINES

3.1 MECP PUBLICATION NPC-300

The applicable noise guidelines for new residential development are those in MECP Publication NPC-300, *"Environmental Noise Guideline, Stationary and Transportation Sources – Approval and Planning"*.

The environmental noise guidelines of the MECP (Publication NPC-300) are discussed briefly below and summarized in Appendix B.

3.1.1 Transportation Noise Sources

3.1.1.1 Architectural Elements

In the daytime (0700 to 2300 hours), the indoor criterion for road noise is $L_{eq,Day}$(1) of 45 dBA for sensitive spaces such as living/dining rooms, dens and bedrooms. At nighttime (2300 to 0700 hours), the indoor criterion for road noise is $L_{eq,Night}$(2) of 45 dBA for sensitive spaces such as living/dining rooms and dens, and 40 dBA for bedrooms.

(1) $L_{eq\ Day}$ = 16-hour daytime (0700-2300) equivalent continuous sound level.
(2) $L_{eq\ Night}$ = 8-hour nighttime (2300-0700) equivalent continuous sound level

The architectural design of the building envelope (walls, windows, etc.) must provide adequate sound isolation to achieve the above indoor sound level limits.

3.1.1.2 Ventilation

When the daytime sound level ($L_{eq\ Day}$) at the exterior face of a noise sensitive window is greater than 65 dBA, means must be provided so that windows can be kept closed for noise control purposes and central air conditioning is required. For daytime sound levels between 56 dBA and 65 dBA inclusive, there need only be the provision for adding air conditioning at a later date. A warning clause advising the occupant of the potential interference with some activities is also required. At nighttime, air conditioning is required when the sound level exceeds 60 dBA ($L_{eq\ Night}$) at a noise sensitive window (provision for adding air conditioning is required when the sound level is greater than 50 dBA).

3.1.1.3 Outdoors

For outdoor amenity areas ("Outdoor Living Areas" – OLA's), the guideline objective is 55 dBA $L_{eq\ Day}$, with an excess not exceeding 5 dBA considered acceptable if it is not feasible to achieve the 55 dBA objective for technical, economic or administrative reasons, provided warning clauses are registered on title. Note, a balcony is not considered an OLA, unless it is:

- the only OLA for the occupant;
- at least 4 m in depth; and
- unenclosed

3.2 REGION OF PEEL

The Region of Peel's noise guidelines are described in the "General Guidelines for the Preparation of Acoustical Reports in the Region of Peel" document. The Region of Peel noise guidelines are essentially the same as the MECP noise guidelines for transportation noise sources except that the nighttime sound level for triggering the air conditioning requirement is one dBA more stringent (i.e., less than) the sound level specified by the MECP; i.e., mandatory air conditioning for nighttime sound levels of 60 dBA or greater, and the provision for adding air conditioning for levels between 51 to 59 dBA inclusive.

The Peel guidelines also indicate a maximum desirable sound barrier height of 4.0 m (relative to roadway centreline) with a maximum acoustic fence height of 2.4 m, although a height no more than 2.0 m is preferred. To make up any additional height beyond that of the fence, a berm is to be used.

3.3 TOWN OF CALEDON

The Town of Caledon noise guidelines are described in the "Development Standards, Policies & Guidelines" document. The Town of Caledon's general policy is not to accept the 5 dBA excess above the 55 dBA objective in OLA's. However, an excess may be acceptable if unreasonably high sound barriers are needed to meet the 55 dBA objective.

The Town's maximum acoustic fence height is 2.4 m. Higher barriers can be provided by using a combination of an acoustic fence and a berm. The maximum permitted sound barrier height according to the Town's Development Standards is 4.8 m (2.4 m fence atop a 2.4 m berm).

Road traffic noise levels are to be calculated using a minimum 20-year traffic forecast and a speed of 10 kph over the posted speed limit.

4.0 NOISE IMPACT ASSESSMENT

4.1 METHOD

The daytime and nighttime sound levels at the two and three-storey dwelling facades were calculated at heights of 4.5 m and 7.5 m above grade, respectively, representing the top storey plane of windows (the worst-case locations). The sound levels in the rear yard OLA's were calculated at a height of 1.5 m above grade, 3 m from the dwelling, at a point aligned with the midpoint of the rear facade. The analysis points are consistent with the NPC-300 requirements.

Inherent screening of each building face due to its orientation to the noise source as well as screening provided by the subject development itself was taken into account. Screening from the existing dwellings on the west side of Kennedy Road was also included. Since site plans/building layouts are not available for the medium-high density and commercial blocks, and these blocks will likely be built after the low and medium density blocks, screening from the medium-high density and commercial blocks was not included in the assessment.

4.2 RESULTS

The highest unmitigated daytime/nighttime sound levels of 72 dBA/72 dBA are predicted to occur at the north facades of the dwellings immediately adjacent to Highway 410 (Location 8 on Figures 3A and 3B). The highest unmitigated OLA daytime sound level of 71 dBA is predicted to occur at the same dwellings (Location 9 on Figures 3A and 3B).

Table 2 summarizes the unmitigated daytime and nighttime sound level predictions.

Appendix C contains a sample sound level calculation.

5.0 NOISE ABATEMENT REQUIREMENTS

The noise control measures can generally be classified into two categories which are interrelated, but which can be treated separately for the most part:

a) The sound isolation performance of architectural elements to achieve the indoor noise guideline sound levels for transportation sources; and

b) design features to attenuate the sound levels in the OLA's.

Noise abatement requirements/recommendations are summarized in Table 3 and in the notes to Table 3.

5.1 INDOORS

5.1.1 Architectural Requirements

The indoor noise guideline sound levels can be achieved by using appropriate construction for exterior walls, windows, and doors. In determining the worst-case architectural sound isolation requirements for the dwellings, exterior wall and window areas were assumed to be 80% and 30%, respectively, of the associated floor area, on each facade of a corner room with both facades exposed directly or at an angle to the road traffic noise source(s).

The assessment shows that:

- Upgraded exterior wall construction meeting STC 54 (e.g. brick veneer) and exterior windows meeting STC 35 are recommended at the dwellings in the low and medium density blocks closest to Highway 410 and Mayfield Road. The specific locations of the dwellings are shown on Figures 3A and 3C.
- At all other dwellings in the low and medium density blocks, exterior wall construction meeting STC 37 and exterior windows with ratings up to STC 30 will be sufficient to meet the indoor noise guideline limits. Note that the window requirements will be lower at dwellings that are farther setback from the roadways and more screened from road traffic noise by other dwellings in the development.

It is expected that typical exterior wall construction meeting the minimum non-acoustical requirements of the OBC will meet the STC 37 requirement.

Upgraded windows that exceed the minimum non-acoustical requirements of the OBC will likely be required to achieve a rating of STC 30 or higher. Note, the window frames themselves must also be designed to ensure that the overall sound isolation performance for the entire window unit meets the sound isolation requirement. This must be confirmed by the window manufacturer through the submission of acoustical test data.

The final sound isolation requirements should be reviewed when detailed architectural plans are developed. Wall and window constructions should also be reviewed at this point to ensure that they will meet the required sound isolation performance. This is typically required by the Town at the time of building permit application.

5.1.2 Ventilation Requirements

The ventilation requirements are:

- Mandatory air conditioning is required at the dwellings in the low and medium density blocks closest to Highway 410, Mayfield Road and Kennedy Road. The specific locations of the dwellings are shown on Figures 3A to 3C.
- All other dwellings in the low and medium density blocks require the provision for adding air conditioning. This typically takes the form of a ducted, forced air heating system, suitably sized to accommodate air conditioning.

5.2 OUTDOORS

The sound barrier analysis was completed using the Grading Plan, prepared by Schaeffers Consulting Engineers, dated February 2021 and the Site Survey prepared by J.H. Gelbloom Surveying Limited received June 1, 2021. The information on the Grading Plan appears very preliminary in that grades at the proposed dwelling locations is not included. It is possible that the final grades could be significantly different than those used to complete this assessment. Thus, the final sound barrier requirements need to be confirmed once detailed grading is available.

The unmitigated daytime OLA sound levels at rear yards with exposure to Highway 410, Kennedy Road and Mayfield Road are predicted to exceed the 55 dBA objective. Thus, sound barriers are required. To meet the 55 dBA objective, these sound barriers would be required:

- 6.0 m high barriers for the dwellings backing onto Highway 410;
- 1.8 m high barriers for dwellings in proximity to Highway 410;
- 4.4 m high barriers for the dwelling immediately adjacent to Mayfield Road; and
- 1.8 m high barriers for dwellings in proximity to Mayfield Road.

These sound barriers would mitigate the OLA sound levels to the 60 dBA maximum permitted under the MECP guidelines:

- Dwellings backing onto Highway 410:
  - 3.6 m high barriers at the northwest block of dwellings;
  - 3.7 m high barriers at the centre block of dwellings;
  - 3.0 m high barriers at the easternmost block of dwellings; and
- 1.8 m to 2.8 m high for the dwellings at the northwest corner of Mayfield Road and Heart Lake Road.

Figures 3A to 3C shows the location of the sound barriers.

Notes on the sound barriers:

- The final sound barrier requirements will depend on the final lot fabric and site design. If the design is modified such that there are no lots backing or siding onto Highway 410 (e.g. the lots front onto a window street adjacent to the highway or dual frontage dwelling design is used), then sound barriers may no longer be required along the north property line. However, sound barriers may still be required at end units in the first row of dwellings from the highway.
- At any lot that does not have a sound barrier, the unmitigated daytime OLA sound level is predicted to be at or below the 55 dBA objective. Thus, additional sound barriers are not required for noise control purposes.
- It is anticipated that all balconies and terraces in the medium density blocks will be less than 4 m in depth and would therefore would not qualify as OLA's under the MECP guidelines.

Thus, sound barriers would not be required. If larger balconies or terraces are included in the site design, the sound barrier requirements should be reviewed.

- The sound barriers must be of solid construction with no gaps, cracks or holes and must have a minimum surface weight of 20 kg/m².

6.0 MEDIUM-HIGH DENSITY AND COMMERCIAL BLOCKS

Building plans for the medium-high density and commercial blocks are currently not available. Specific mitigation measures have therefore not been established.

It is expected that residential dwellings in the medium-high density blocks would require mandatory air conditioning due to the proximity to Mayfield Road. Upgraded facade construction and/or upgraded exterior windows may also be needed.

It is anticipated that all balconies and terraces in the medium-high density blocks will be less than 4 m in depth and would therefore would not qualify as OLA's under the MECP guidelines. Thus, sound barriers would not be required. If larger balconies or terraces are included in the site design, the sound barrier requirements should be reviewed.

Commercial uses within the commercial block would need to be designed so any sound emissions from these facilities comply with the stationary source sound level limits in Publication NPC-300, with consideration to the surrounding residential uses including those that are part of this proposed development.

Detailed noise studies of these blocks should be done as a condition of Site Plan Approval.

7.0 WARNING CLAUSES

Warning clauses are a tool to inform prospective owners/occupants of potential annoyance due to existing noise sources. Where the guideline sound level limits are exceeded, appropriate warning clauses should be registered on title or included in the development agreement that is registered on title. The warning clauses should also be included in agreements of Offers of Purchase and Sale and lease/rental agreements to make future occupants aware of the potential noise situation.

Table 3 and the notes to Table 3 summarize the warning clauses for the site.

8.0 CONCLUSIONS

With the incorporation of the recommended noise mitigation measures, the applicable Town of Caledon, Peel Region and MECP noise guidelines can be met and a suitable acoustical environment provided for the occupants.

The approvals and administrative procedures are available to ensure that the noise requirements are implemented.

9.0 REFERENCES

1. PC STAMSON 5.04, "Computer Program for Road Traffic Noise Assessment", Ontario Ministry of the Environment.

2. Building Practice Note No. 56: "Controlling Sound Transmission into Buildings", by J.D. Quirt, Division of Building Research, National Council of Canada, September 1985.

3. "Environmental Noise Assessment in Land-Use Planning 1987", Ontario Ministry of the Environment, February 1987, ISBN 0-7729-2804-5.

4. MECP Publication NPC-300, "Stationary and Transportation Sources – Approval and Planning" Ontario Ministry of the Environment, August 2013.

BL\SN\mv\tk
J:\2019\1190388\000\Reports\Snell's Hollow Secondary Plan, Caledon - Noise v1_0 Fnl.docx

TABLE 1 ROAD TRAFFIC DATA

Roadway	Year	24-Hour Volume	% Trucks		Speed Limit (kph)(6)	Day/Night Split (%)
			Medium	Heavy		
Highway 410(1)	Ultimate SADT	132 700	1.75	5.25	90	67/33
Southbound 410 Off-ramp(2)(3)	2033 (2041)	7 900 (9 256)	1.75	5.25	80	67/33
Westbound Mayfield Road to Southbound 410 On-ramp(2)(3)	2033 (2041)	8 790 (10 299)	1.75	5.25	30	67/33
Mayfield Road(2)(4)	2033 (2041)	54 340 (63 668)	2.28 Day 1.91 Night	4.36 Day 3.72 Night	60	86/14
Kennedy Road(2)(5)	2033 (2041)	21 440 (25 210)	3.9	2.6	50	90/10
Heart Lake Road(2)(5)	2033 (2041)	5 380 (6 304)	2.7	1.8	50	90/10

Notes:

(1) Ultimate road traffic data for Highway 410 was obtained from MTO. The trucks were split 25%/75% medium/heavy, as recommended by the MTO for freeways. The day/night split is assumed.

(2) The 24-hour traffic volumes were calculated from the future (year 2033) peak hour traffic volumes provided by NexTrans. The peak hour volumes were converted to 24-hour volumes using a factor of 10. Future (year 2041) volumes were calculated using a growth rate of 2%, compounded annually. The future volume is shown in brackets.

(3) Truck percentages and day/night split assumed to be the same as for the through-lanes of Highway 410.

(4) Ultimate truck percentages and day/night split provided by the Region of Peel.

(5) Truck percentages were calculated from the year 2016 and 2018 TMC data provided by NexTrans. Medium and heavy trucks were assumed to be 60% and 40% respectively of the total truck volumes. The day/night split is assumed.

(6) Posted speed limit shown. Vehicle speeds 10 kph higher than the posted speed limit were used in the analysis, per Town of Caledon guidelines.

TABLE 2 PREDICTED UNMITIGATED SOUND LEVELS OUTDOORS[1]

Location[1]	Source	Distance (m)[2]	$L_{eq\ Day}$ (dBA)	$L_{eq\ Night}$ (dBA)
1 (West Facade)	Highway 410 (Southeastbound)	63	65	65
	Highway 410 (Northwestbound)	78	63	63
	Kennedy Road	28	65	58
	TOTAL	-	**69**	**68**
2 (North Facade)	Highway 410 (Southeastbound)	63	68	68
	Highway 410 (Northwestbound)	78	66	66
	Kennedy Road	28	62	55
	TOTAL	-	**71**	**70**
3 (OLA)	Highway 410 (Southeastbound)	58	68	-
	Highway 410 (Northwestbound)	73	66	-
	Kennedy Road	34	61	-
	TOTAL	-	**70**	-
4 (North Facade)	Highway 410 (Southeastbound)	95	63	63
	Highway 410 (Northwestbound)	109	62	62
	Kennedy Road	113	50	44
	TOTAL	-	**66**	**66**
5 (East Facade)	Highway 410 (Southeastbound)	136	59	59
	Highway 410 (Northwestbound)	150	59	59
	TOTAL	-	**62**	**62**
6 (North Facade)	Highway 410 (Southeastbound)	155	59	59
	Highway 410 (Northwestbound)	169	58	58
	TOTAL	-	**62**	**62**
7 (OLA)	Mayfield Road (Westbound)	324	49	-
	Mayfield Road (Eastbound)	333	49	-
	Kennedy Road	195	46	-
	TOTAL	-	**53**	-
8 (North Facade)	Highway 410 (Southeastbound)	49	69	69
	Highway 410 (Northwestbound)	63	68	68
	TOTAL	-	**72**	**72**
9 (OLA)	Highway 410 (Southeastbound)	47	69	-
	Highway 410 (Northwestbound)	61	67	-
	TOTAL	-	**71**	-
10 (North Facade)	Highway 410 (Southeastbound)	101	61	61
	Highway 410 (Northwestbound)	115	60	60
	TOTAL	-	**63**	**63**

…/cont'd

TABLE 2 PREDICTED UNMITIGATED SOUND LEVELS OUTDOORS[(1)] (continued)

Location[(1)]	Source	Distance (m)[(2)]	$L_{eq\ Day}$ (dBA)	$L_{eq\ Night}$ (dBA)
11 (North Facade)	Highway 410 (Southeastbound)	98	59	59
	Highway 410 (Northwestbound)	112	58	58
	TOTAL	-	**62**	**62**
12 (North Facade)	Highway 410 (Southeastbound)	110	59	59
	Highway 410 (Northwestbound)	125	59	59
	TOTAL	-	**62**	**62**
13 (North Facade)	Highway 410 (Southeastbound)	102	54	54
	Highway 410 (Northwestbound)	116	53	53
	TOTAL	-	**57**	**57**
14 (OLA)	Highway 410 (Southeastbound)	86	56	-
	Highway 410 (Northwestbound)	101	54	-
	TOTAL	-	**58**	-
15 (Northeast Facade)	Highway 410 (Southeastbound)	126	56	56
	Highway 410 (Northwestbound)	140	55	55
	TOTAL	-	**58**	**58**
16 (North Facade)	Highway 410 (Southeastbound)	94	57	57
	Highway 410 (Northwestbound)	109	56	56
	TOTAL	-	**60**	**60**
17 (North Facade)	Highway 410 (Southeastbound)	140	55	55
	Highway 410 (Northwestbound)	154	55	55
	TOTAL	-	**58**	**58**
18 (North Facade)	Highway 410 (Southeastbound)	128	58	58
	Highway 410 (Northwestbound)	144	57	57
	TOTAL	-	**61**	**61**
19 (East Facade)	Highway 410 (Southeastbound)	141	58	58
	Highway 410 (Northwestbound)	158	57	57
	Heart Lake Road	68	46	40
	TOTAL	-	**61**	**61**
20 (North Facade)	Highway 410 (Southeastbound)	109	64	64
	Highway 410 (Northwestbound)	125	63	63
	Highway 410 Offramp	99	53	53
	Heart Lake Road	29	55	48
	TOTAL	-	**67**	**67**

…/cont'd

TABLE 2 PREDICTED UNMITIGATED SOUND LEVELS OUTDOORS[(1)] (continued)

Location[(1)]	Source	Distance (m)[(2)]	$L_{eq\ Day}$ (dBA)	$L_{eq\ Night}$ (dBA)
21 (East Facade)	Highway 410 (Southeastbound)	212	52	52
	Highway 410 (Northwestbound)	229	52	52
	Highway 410 Offramp	202	43	43
	Heart Lake Road	29	58	51
	TOTAL	-	**60**	**57**
22 (South Facade)	Mayfield Road (Westbound)	146	60	55
	Mayfield Road (Eastbound)	163	60	54
	Heart Lake Road	61	54	48
	TOTAL	-	**63**	**58**
23 (OLA)	Mayfield Road (Westbound)	144	60	-
	Mayfield Road (Eastbound)	160	60	-
	Heart Lake Road	64	50	-
	TOTAL	-	**63**	-
24 (East Facade)	Mayfield Road (Westbound)	68	62	57
	Mayfield Road (Eastbound)	83	61	56
	Heart Lake Road	183	50	44
	TOTAL	-	**65**	**59**
25 (South Facade)	Mayfield Road (Westbound)	29	70	65
	Mayfield Road (Eastbound)	40	69	64
	TOTAL	-	**73**	**67**
26 (OLA)	Mayfield Road (Westbound)	32	66	-
	Mayfield Road (Eastbound)	43	63	-
	TOTAL	-	**68**	-
27 (OLA)	Mayfield Road (Westbound)	56	60	-
	Mayfield Road (Eastbound)	67	58	-
	TOTAL	-	**62**	-
28 (OLA)	Mayfield Road (Westbound)	152	52	-
	Mayfield Road (Eastbound)	163	52	-
	TOTAL	-	**55**	-
29 (OLA)	Highway 410 (Southeastbound)	78	65	-
	Highway 410 (Northwestbound)	94	64	-
	Highway 410 Off-ramp	127	42	-
	Heart Lake Road	57	58	-
	TOTAL	-	**68**	-

…/cont'd

TABLE 2 PREDICTED UNMITIGATED SOUND LEVELS OUTDOORS(1) (continued)

Location(1)	Source	Distance (m)(2)	$L_{eq\ Day}$ (dBA)	$L_{eq\ Night}$ (dBA)
30 (North Facade)	Highway 410 (Southeastbound)	155	61	61
	Highway 410 (Northwestbound)	172	60	60
	Highway 410 Off-ramp	142	52	52
	Heart Lake Road	31	55	48
	TOTAL	-	**64**	**64**
31 (East Facade)	Highway 410 (Southeastbound)	152	61	61
	Highway 410 (Northwestbound)	170	60	60
	Highway 410 Off-ramp	120	54	54
	Highway 410 On-ramp	220	42	42
	TOTAL	-	**64**	**64**
32 (West Facade)	Mayfield Road (Westbound)	72	63	58
	Mayfield Road (Eastbound)	90	62	57
	Heart Lake Road	24	59	52
	TOTAL	-	**67**	**61**
33 (East Facade)	Highway 410 (Southeastbound)	185	59	59
	Highway 410 (Northwestbound)	201	59	59
	Highway 410 Off-ramp	145	51	51
	TOTAL	-	**62**	**62**
34 (East Facade)	Highway 410 (Southeastbound)	179	62	62
	Highway 410 (Northwestbound)	196	61	61
	Highway 410 Off-ramp	65	58	58
	Highway 410 On-ramp	99	50	50
	Mayfield Road (Westbound)	102	57	51
	Mayfield Road (Eastbound)	122	56	50
	TOTAL	-	**66**	**66**
35 (South Facade)	Highway 410 (Southeastbound)	275	54	54
	Highway 410 (Northwestbound)	291	53	53
	Highway 410 Off-ramp	171	45	45
	Highway 410 On-ramp	195	43	43
	Mayfield Road (Westbound)	89	61	55
	Mayfield Road (Eastbound)	106	60	54
	TOTAL	-	**64**	**60**

Notes:

(1) See Figures 3A to 3C.

(2) Distance indicated is from the centreline of the noise source to the facade or OLA.

TABLE 3 MINIMUM NOISE ABATEMENT MEASURES

Location[(1)]	Air Conditioning[(2)]	Exterior Wall[(3)]	Exterior Window[(4)]	Sound Barrier[(5)]	Warning Clauses[(6)]
Dwellings with rear yards that back onto Highway 410 (See Figure 4 - Row A)	Mandatory	STC 54	Up to STC 35	Minimum 3.0 m to 3.7 m high (see Figures 3A to 3C for specific locations)	A + B + D
Second row of dwellings from Highway 410, between Kennedy Road and westernmost proposed park Dwellings separated from Highway 410 by internal roadway (See Figure 4 - Row B)	Mandatory	STC 54	Up to STC 35	1.8 m high (see Figures 3A and 3C for specific locations)	A + B + D
Other dwellings with exposure to Highway 410 (See Figure 4 - Row C)	Mandatory	STC 37	Up to STC 30	1.8 m high (see Figures 3A to 3C for specific locations)	A + B + D
First row of dwellings from Mayfield Road and dwellings to the east of the SWM pond (See Figure 4 - Row D)	Mandatory	STC 54	Up to STC 35	Minimum 2.8 m high (see Figures 3A to 3C for specific locations)	A + B + D + E
All other dwellings in first row north of the easternmost medium-high density block (See Figure 4 - Row E)	Mandatory	STC 37	Up to STC 30	None	A + B + E
Dwellings immediately adjacent to Kennedy Road (See Figure 4 - Row F)	Mandatory	STC 37	Up to STC 30	None	A + B
Dwellings along the north side of the SWM pond and east of the natural heritage system (See Figure 4 - Row G)	Provision for adding	STC 37	Up to STC 30	1.8 m and 2.5 m high (see Figures 3A to 3C for specific locations)	A + C + D
All other dwellings (See Figure 4 - Row H)	Provision for adding	STC 37	Up to STC 30	None	A + C

Notes to Table 3 on following page.

NOTES TO TABLE 3

(1) See Figures 3A, 3B and 3C.

(2) Where methods must be provided to allow windows to remain closed for noise control purposes, a commonly used technique is that of air conditioning.

(3) STC – Sound Transmission Class Rating (Reference ASTM E-413).

The requirements are based on the assumed percentages of wall and window area to associated floor area stated in Section 5.1.1 and should be reviewed once detailed floor plans are available.

(4) STC – Sound Transmission Class Rating (Reference ASTM E-413). A sliding glass walkout door should be considered as a window and be included in the percentage of glazing.

The requirements were based on the assumed percentages of wall and window area to associated floor area stated in Section 5.1.1 and should be reviewed once detailed floor plans are available.

(5) Sound barriers must be of solid construction with no gaps cracks or holes and must have a minimum surface density of 20 kg/m².

(6) Standard example warning clauses to be registered on title and be included in Offers of Purchase and Sale for designated lots:

A. "Purchases/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 the Environment, Conservation and Parks."

B. "This dwelling unit has been supplied with a central air conditioning system which 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 the Environment, Conservation and Parks."

C. "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 will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the sound level limits of the Ministry of the Environment, Conservation and Parks."

D. "Purchasers/tenants are advised that a noise barrier wall is located at the rear/side of this property. The owner of this property also owns his/her section of the noise barrier wall. The noise barrier wall is not in public ownership. Monitoring, maintenance, inspection, repair and replacement of this noise barrier wall, including any associated costs, are the sole responsibility of the property owner. The Town of Caledon is in no way responsible for this noise barrier wall. Should this noise barrier wall fall, it is the property owner's responsibility to repair or replace his/her section of the wall, at his/her cost. If the property owner fails to maintain the noise barrier wall, the Town of Caledon will notify the requirement to repair in writing. If the property owner does not comply with the Town's request, the Town will correct the deficiency and bill the property owner accordingly."

E. "Purchasers/tenants are advised that due to the proximity of the existing Solocrete General Contracting Ltd. and North Brampton Pumping Station, noise from these facilities may, at times, be audible."

(7) Conventional ventilated attic roof construction meeting OBC requirements is satisfactory.

(8) All exterior doors shall be fully weather-stripped.

No.	Revision/Issue	Date

VALCOUSTICS Canada Ltd.
30 Wertheim Court, Unit 25
Richmond Hill, Ontario
Canada L4B 1B9
solutions@valcoustics.com
Phone: (905) 764-5223
Fax: (905) 764-6813

Title
Key Plan

Project No.
119-0388

Date
July 5, 2021

Project Name
Snell's Hollow Secondary Plan, Caledon

Scale
N.T.S.

Figure
1

N

Project North

True North

P:\1240-001 (Snell's Hollow Landowner Group)\7. Drawings\7.1 GSAI\2020 12 December\DCP Dec 16 20.dwg

LEGEND

- SECONDARY PLAN AREA
- DETACHED / SEMI-DETACHED / ST. TOWNHOUSES
- DUAL-FRONTAGE TOWNHOUSES
- BACK-TO-BACK TOWNHOUSES
- MEDIUM-HIGH DENSITY RESIDENTIAL
- COMMERCIAL
- SWM POND
- PARK
- OPEN SPACE / BUFFERS
- NATURAL HERITAGE SYSTEM

UNIT ESTIMATES

- DETACHED / SEMI-DETACHED / ST. TOWNHOUSES: 10.39ha x 35 UPHA = 364 UNITS
- DUAL-FRONTAGE TOWNHOUSES: 2.18ha x 55 UPHA =120 UNITS
- BACK-TO-BACK TOWNHOUSES: 2.25ha x 100 UPHA = 225 UNITS
- MEDIUM-HIGH DENSITY RESIDENTIAL 2.52ha x 150 UPHA = 378 UNITS

APPROXIMATE TOTAL UNITS: 1,087 UNITS

POPULATION ESTIMATES

LAND USE	TOTAL NUMBER OF UNITS	PERSONS PER UNIT*	POPULATION
LOW DENSITY (DETACHED, SEMI-DETACHED & ST. TOWNHOUSES)	364	3.43	1249
MEDIUM DENSITY (TOWNHOUSES)	345	2.92	1007
MEDIUM-HIGH DENSITY (TOWNHOUSES, APARTMENTS)	378	2.23	843
TOTALS	1,087		3,099

* PERSONS PER UNIT RATE PROVIDED BY REGION OF PEEL

JOB ESTIMATES

LAND USE	NUMBER OF JOBS
COMMERCIAL (63 JOBS / ha)	93
WORK FROM HOME & NO FIXED EMPLOYMENT (4% OF TOTAL POPULATION)	124
TOTALS	217

PARKLAND DEDICATION

LAND USE	REQUIRED PARKLAND (ha)
RESIDENTIAL AREAS (5% NDA) - 33.46 X 5%	1.67
COMMERCIAL AREAS (2% NDA) - 1.47 X 2%	0.03
TOTALS	1.70

PEOPLE & JOBS DENSITY

TOTAL PEOPLE & JOBS	TOTAL AREA (ha)	TOTAL PEOPLE & JOBS PER HECTARE
3316	39.09	**84.83**

General Notes

BASE DRAWING BY GLEN SCHNARR & ASSOCIATES INC.

No.	Revision/Issue	Date

VALCOUSTIC Canada Ltd.

30 Wertheim Court, Unit 25
Richmond Hill, Ontario
Canada L4B 1B9
solutions@valcoustics.com
Phone: (905) 764-5223
Fax: (905) 764-6813

Project Name
Snell's Hollow Secondary Plan, Caledon

Title
Development Concept Plan - Full Site

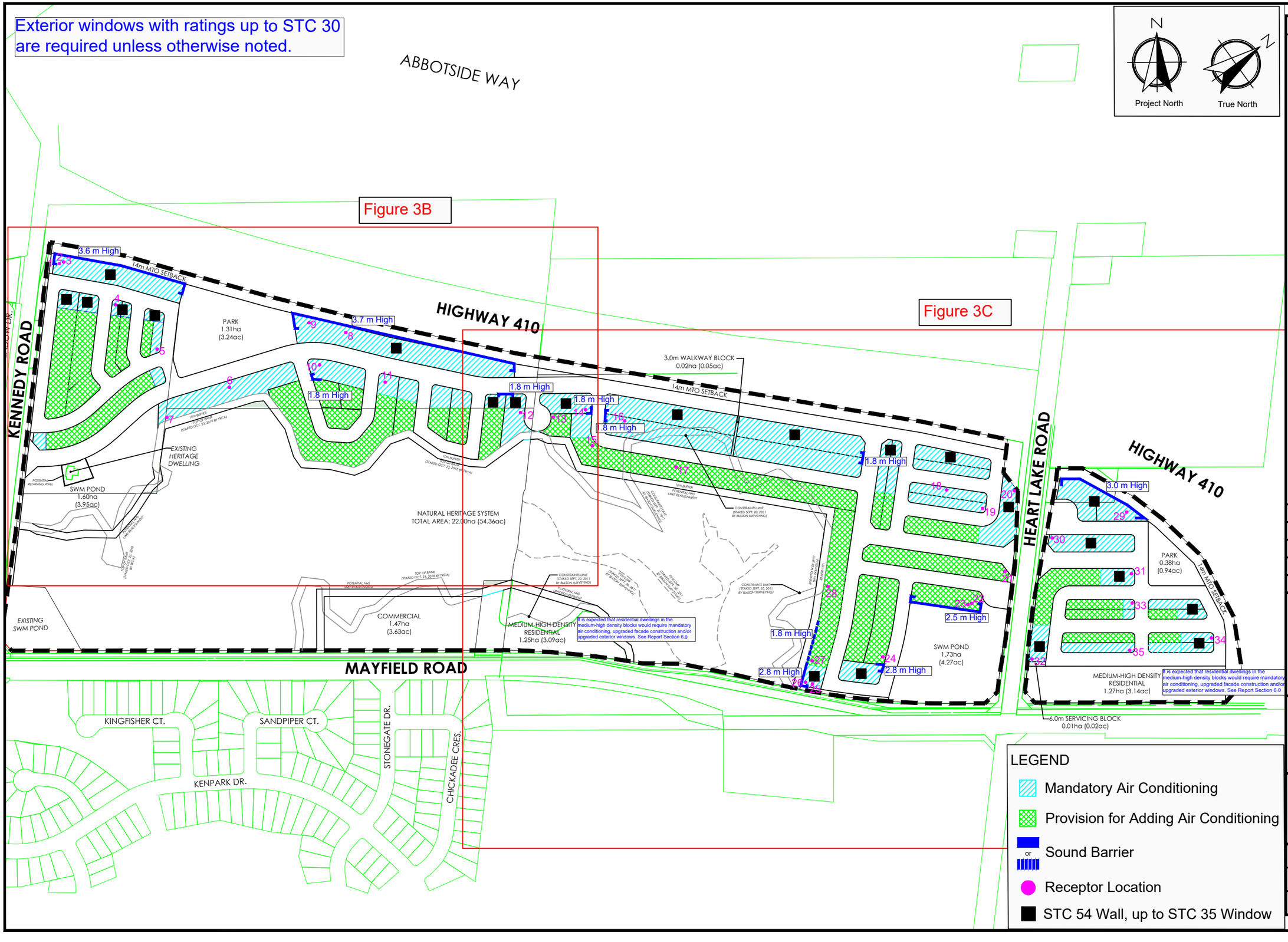
Project 119-0388

Date July 5, 2021

Scale N.T.S.

Figure 2

Exterior windows with ratings up to STC 30 are required unless otherwise noted.



General Notes

BASE DRAWING BY GLEN SCHNARR & ASSOCIATES INC.

No.	Revision/Issue	Date

VALCOUSTICS Canada Ltd.
30 Wertheim Court, Unit 25
Richmond Hill, Ontario
Canada L4B 1B9
solutions@valcoustics.com
Phone: (905) 764-5223
Fax: (905) 764-6813

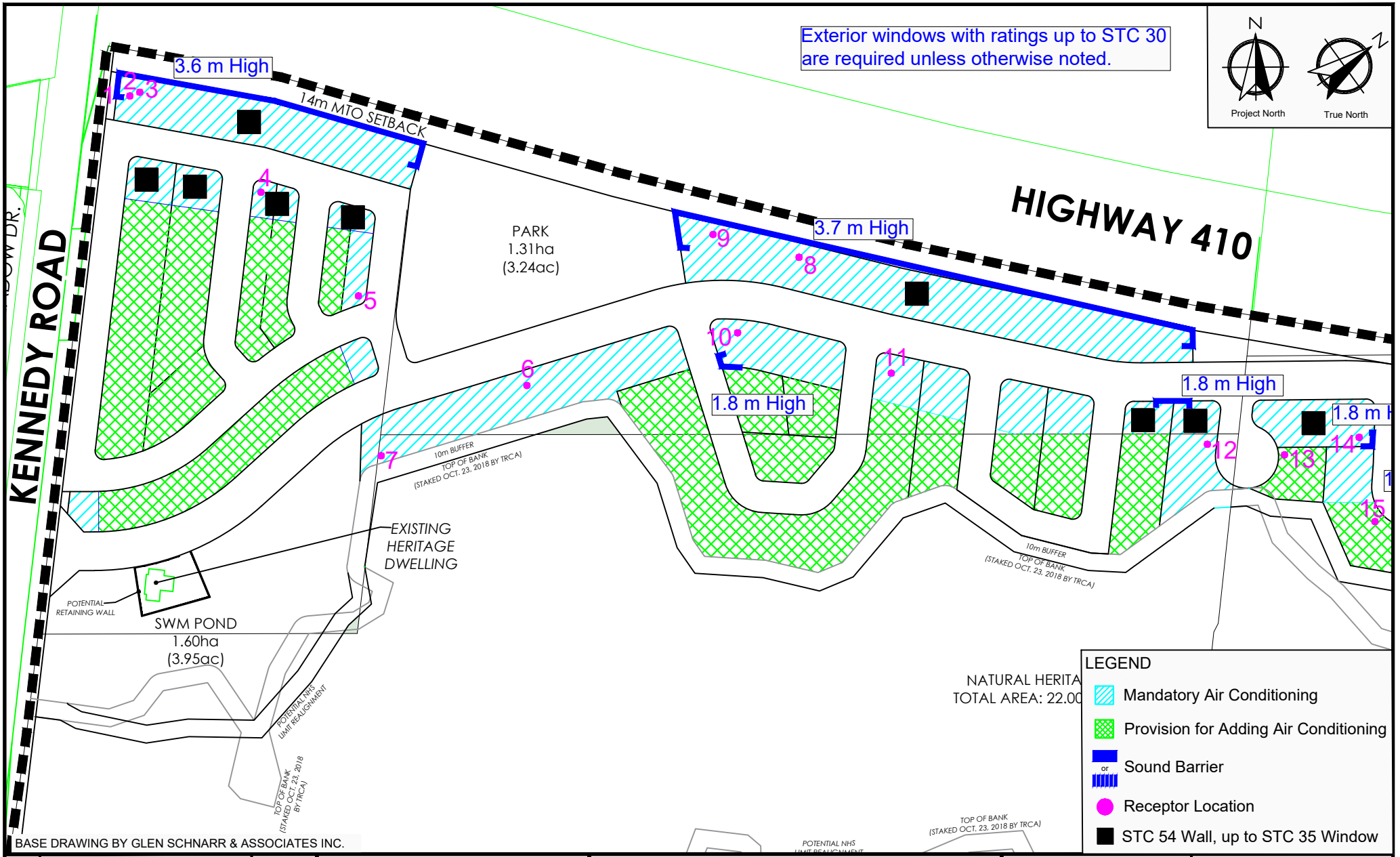
Project Name

Snell's Hollow Secondary Plan, Caledon

Title

Development Concept Plan With Noise Mitigation Requirements - Full Site

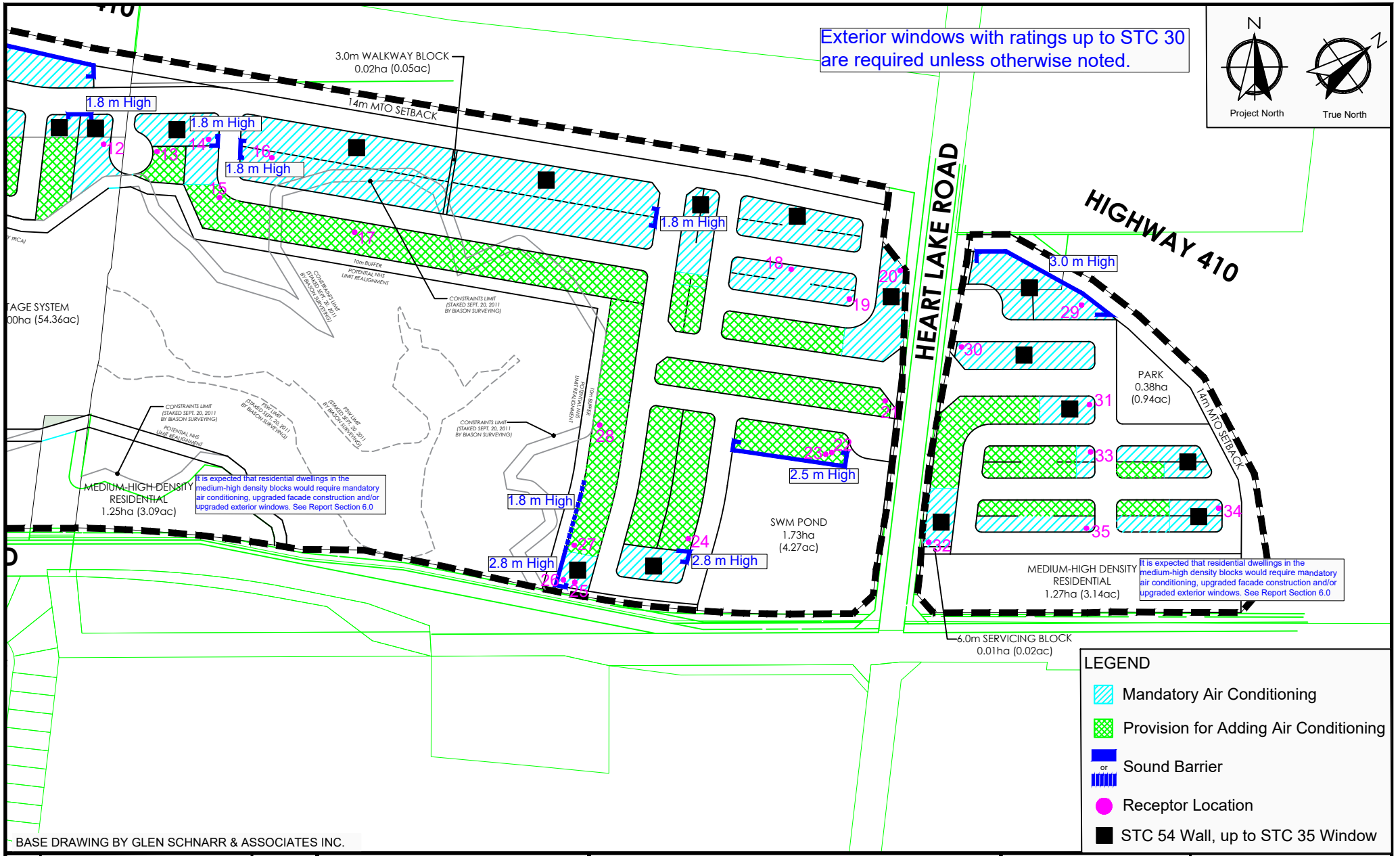
Project	Figure
119-0388	3A
Date: July 5, 2021	
Scale: N.T.S.	



No.	Revision/Issue	Date

VALCOUSTICS Canada Ltd.
30 Wertheim Court, Unit 25
Richmond Hill, Ontario
Canada L4B 1B9
solutions@valcoustics.com
Phone: (905) 764-5223
Fax: (905) 764-6813

Title: Development Concept Plan With Noise Mitigation Requirements - West Area		Project No.: 119-0388	Date: July 5, 2021
Project Name: Snell's Hollow Secondary Plan, Caledon		Scale: N.T.S.	Figure: 3B



No.	Revision/Issue	Date

VALCOUSTICS Canada Ltd.
30 Wertheim Court, Unit 25
Richmond Hill, Ontario
Canada L4B 1B9
solutions@valcoustics.com
Phone: (905) 764-5223
Fax: (905) 764-6813

Title: Development Concept Plan With Noise Mitigation Requirements - East Area

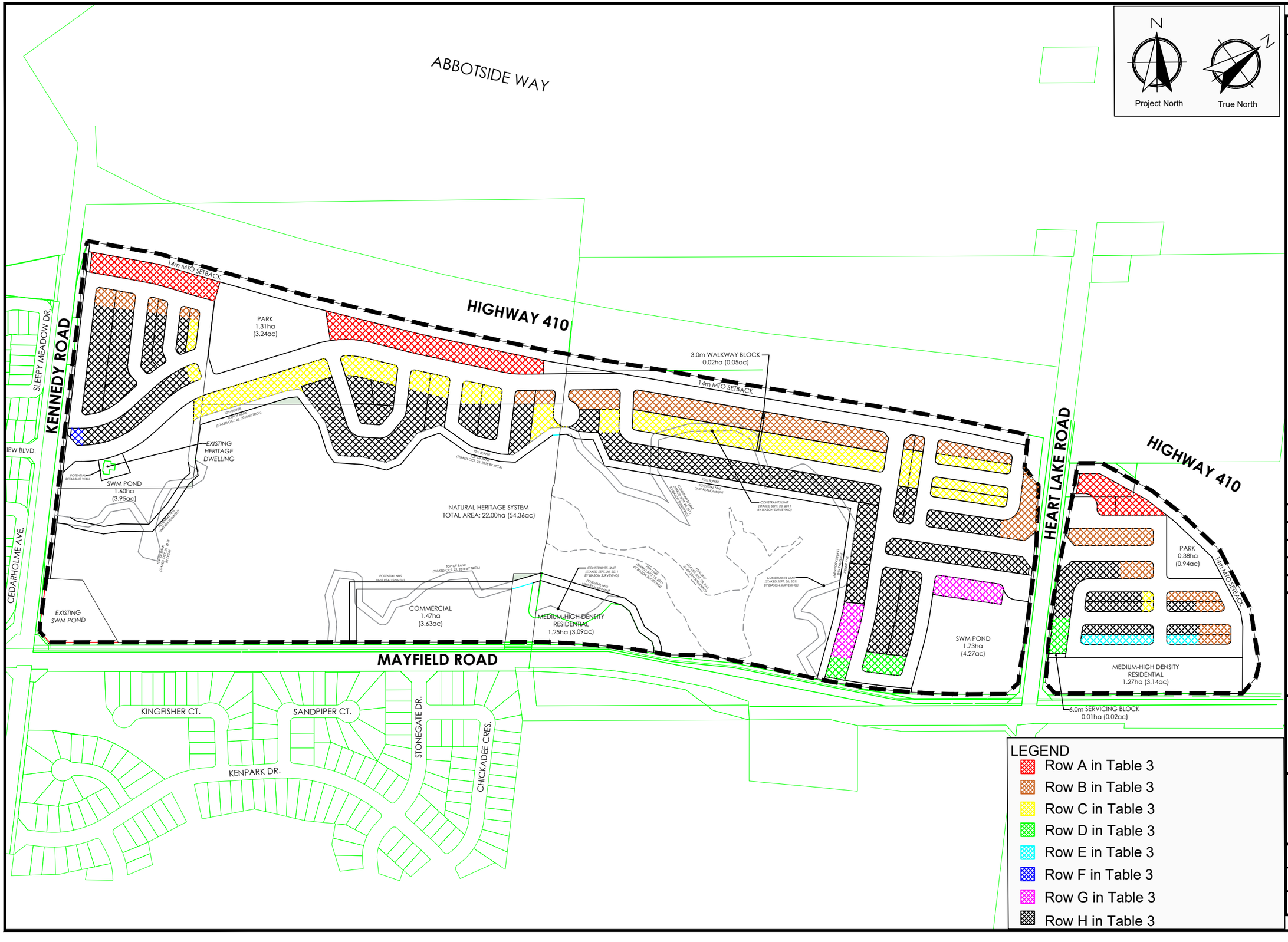
Project No.: 119-0388

Date: July 5, 2021

Project Name: Snell's Hollow Secondary Plan, Caledon

Scale: N.T.S.

Figure: 3C



General Notes

BASE DRAWING BY GLEN SCHNARR & ASSOCIATES INC.

No.	Revision/Issue	Date

VALCOUSTICS Canada Ltd.
30 Wertheim Court, Unit 25
Richmond Hill, Ontario
Canada L4B 1B9
solutions@valcoustics.com
Phone: (905) 764-5223
Fax: (905) 764-6813

Project Name
Snell's Hollow Secondary Plan, Caledon

Title
Development Concept Plan - Representation of Table 3

Project 119-0388

Date July 5, 2021

Scale N.T.S.

Figure 4

APPENDIX A

ROAD TRAFFIC DATA

Brett Lipson

From: Caimano, Riccardo (MTO) <Riccardo.Caimano@ontario.ca>
Sent: December 24, 2020 12:54 PM
To: Brett Lipson
Cc: Seema Nagaraj; Alam, Ahsan (MTO)
Subject: RE: Traffic Data Request (VCL File: 119-388)

Hi Brett,

In response to your request please find below the information available from this office for Highway 410 West of Heart Lake Road.

2016 AADT = 59,600
2016 SADT = 72,700
Number of through lanes = 4
Ultimate AADT = 108,800
Ultimate SADT = 132,700
Ultimate number of through lanes = 4
Posted Speed = 90 km/hr
Percentage of Trucks = 7%

Please note that the above information is estimated based upon our current knowledge of the area, which may be subject to change in the future. Other information related to ROW and gradient will be available from Central Region Traffic Office.

If you require further information, please don't hesitate to contact me.

Happy Holidays!

Riccardo Caimano | Planner
Systems Analysis and Forecasting Office
Ministry of Transportation Ontario
Mobile: 416.587.9098 | E: Riccardo.Caimano@ontario.ca

From: Brett Lipson <blipson@valcoustics.com>
Sent: December 23, 2020 5:35 PM
To: Caimano, Riccardo (MTO) <Riccardo.Caimano@ontario.ca>
Cc: Seema Nagaraj <seema@valcoustics.com>
Subject: Traffic Data Request (VCL File: 119-388)

Hello Riccardo,

We are currently preparing an environmental noise assessment report for a proposed development located to the northeast of Kennedy Road and Mayfield Road in Brampton (See attached image). For our study, we require ultimate traffic data for Highway 410 west of Heart Lake Road. Please let us know what is available.

Thank you,

Brett Lipson, M.Eng., EIT

VALCOUSTICS
Canada Ltd.
consulting acoustical engineers

30 Wertheim Court, Unit 25
Richmond Hill, Ontario
Canada L4B 1B9
Tel: 905-764-5223 ext. 249
Fax: 905-764-6813
solutions@valcoustics.com

Spectrum

Turning Movement Count
Location Name: KENNEDY RD N & MAYFIELD RD
Date: Wed, Mar 07, 2018 Deployment Lead: Theo Daglis

Turning Movement Count (19 . KENNEDY RD N & MAYFIELD RD) CustID: 01415126 MioID: 502452

Start Time	N Approach KENNEDY RD						E Approach MAYFIELD RD						S Approach KENNEDY RD N						W Approach MAYFIELD RD						Int. Total (15 min)	Int. Total (1 hr)
	Left N:E	Thru N:S	Right N:W	U-Turn N:N	Peds N:	Approach Total	Left E:S	Thru E:W	Right E:N	U-Turn E:E	Peds E:	Approach Total	Left S:W	Thru S:N	Right S:E	U-Turn S:S	Peds S:	Approach Total	Left W:N	Thru W:E	Right W:S	U-Turn W:W	Peds W:	Approach Total		
07:00:00	166	44	40	0	0	250	7	105	47	0	0	159	8	6	17	0	0	31	13	214	13	0	3	240	680	
07:15:00	142	70	46	0	0	258	11	134	55	0	1	200	4	10	18	0	1	32	28	223	17	0	1	268	758	
07:30:00	146	64	50	0	0	260	7	112	48	0	0	167	10	15	37	0	0	62	24	265	24	0	0	313	802	
07:45:00	166	67	58	0	1	291	13	144	61	0	0	218	11	10	38	0	1	59	30	328	21	0	2	379	947	3187
08:00:00	141	74	65	0	0	280	16	150	63	0	0	229	10	22	19	0	0	51	39	231	27	0	3	297	857	3364
08:15:00	96	67	66	0	0	229	16	125	49	0	0	190	15	27	20	0	0	62	37	243	27	0	1	307	788	3394
08:30:00	114	107	46	0	0	267	11	120	49	0	0	180	11	23	34	0	0	68	20	202	28	0	0	250	765	3357
08:45:00	86	62	56	0	0	204	18	127	42	0	0	187	11	13	19	0	0	43	22	201	21	0	2	244	678	3088
BREAK																										
11:00:00	47	20	25	0	0	92	5	54	34	0	1	93	8	14	15	0	1	37	22	98	15	0	1	135	357	
11:15:00	57	24	28	0	0	109	6	72	46	0	0	124	12	23	11	0	0	46	26	86	12	0	0	124	403	
11:30:00	58	25	22	0	0	105	6	83	48	0	1	137	8	22	11	0	0	41	18	101	10	0	0	129	412	
11:45:00	57	20	35	0	0	112	9	79	36	0	1	124	14	16	16	0	0	46	22	85	12	0	0	119	401	1573
12:00:00	55	20	30	1	0	106	10	74	42	0	0	126	5	23	11	0	0	39	23	83	13	0	0	119	390	1606
12:15:00	44	18	35	0	0	97	3	83	39	0	0	125	9	25	13	0	0	47	38	97	10	0	0	145	414	1617
12:30:00	59	15	40	0	0	114	5	76	45	0	0	126	6	23	9	0	0	38	34	89	11	0	0	134	412	1617
12:45:00	60	15	18	0	0	93	14	86	46	0	0	146	7	20	9	0	0	36	28	79	13	0	1	120	395	1611
13:00:00	52	16	19	0	0	87	8	83	43	0	0	134	7	22	10	0	0	39	26	78	13	0	1	117	377	1598
13:15:00	55	22	28	0	0	105	9	107	49	0	0	165	8	15	16	0	0	39	26	108	14	0	1	148	457	1641
13:30:00	56	17	20	0	0	93	17	82	45	0	0	144	7	18	7	0	0	32	30	114	14	0	2	158	427	1656
13:45:00	49	14	23	0	0	86	9	84	46	0	0	139	16	12	5	0	0	33	20	104	10	0	1	134	392	1653
BREAK																										
15:00:00	78	25	51	0	0	154	20	174	114	0	2	308	24	30	19	0	2	73	21	114	16	0	0	151	686	
15:15:00	74	25	43	0	0	142	13	196	93	0	0	302	16	44	10	0	0	70	38	108	27	0	0	173	687	
15:30:00	56	28	44	0	0	128	13	182	104	0	0	299	26	44	29	0	0	99	45	145	18	0	2	208	734	
15:45:00	53	27	42	0	0	122	23	190	114	0	2	327	28	57	22	0	1	107	57	159	18	0	1	234	790	2897
16:00:00	61	32	20	0	0	113	26	224	89	0	0	339	20	49	16	0	0	85	61	136	13	0	3	210	747	2958
16:15:00	68	30	31	0	0	129	26	218	112	0	0	356	24	52	16	0	0	92	47	100	21	0	6	168	745	3016
16:30:00	59	36	33	0	0	128	25	253	120	0	0	398	20	43	22	0	0	85	62	148	17	0	0	227	838	3120
16:45:00	73	35	31	0	0	139	26	224	108	0	0	358	22	50	18	0	0	90	50	138	17	0	3	205	792	3122
17:00:00	64	31	38	0	2	133	33	218	135	0	0	386	29	69	25	0	0	123	59	156	10	0	2	225	867	3242
17:15:00	40	29	39	0	0	108	32	267	125	0	6	424	15	46	18	0	4	79	56	170	15	0	1	241	852	3349
17:30:00	58	30	41	0	0	129	49	251	131	0	0	431	27	58	25	0	0	110	55	137	27	0	0	219	889	3400
17:45:00	78	40	37	0	0	155	24	236	114	0	0	374	27	53	21	0	0	101	55	162	18	0	4	235	865	3473
Grand Total	2468	1149	1200	1	3	4818	510	4613	2292	0	14	7415	465	954	576	0	10	1995	1132	4702	542	0	41	6376	**20604**	-
Approach%	51.2%	23.8%	24.9%	0%		-	6.9%	62.2%	30.9%	0%		-	23.3%	47.8%	28.9%	0%		-	17.8%	73.7%	8.5%	0%		-	**-**	-
Totals %	12%	5.6%	5.8%	0%		23.4%	2.5%	22.4%	11.1%	0%		36%	2.3%	4.6%	2.8%	0%		9.7%	5.5%	22.8%	2.6%	0%		30.9%	**-**	-
Heavy	211	28	61	0		-	12	254	201	0		-	17	33	16	0		-	61	253	49	0		-	**-**	-
Heavy %	8.5%	2.4%	5.1%	0%		-	2.4%	5.5%	8.8%	0%		-	3.7%	3.5%	2.8%	0%		-	5.4%	5.4%	9%	0%		-	**-**	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	**-**	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	**-**	-

Spectrum

Turning Movement Count
Location Name: KENNEDY RD N & MAYFIELD RD
Date: Wed, Mar 07, 2018 Deployment Lead: Theo Daglis

Peak Hour: 07:30 AM - 08:30 AM **Weather: Overcast (0 °C)**

Start Time	N Approach KENNEDY RD						E Approach MAYFIELD RD						S Approach KENNEDY RD N						W Approach MAYFIELD RD						Int. Total (15 min)
	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	
07:30:00	146	64	50	0	0	260	7	112	48	0	0	167	10	15	37	0	0	62	24	265	24	0	0	313	802
07:45:00	166	67	58	0	1	291	13	144	61	0	0	218	11	10	38	0	1	59	30	328	21	0	2	379	947
08:00:00	141	74	65	0	0	280	16	150	63	0	0	229	10	22	19	0	0	51	39	231	27	0	3	297	857
08:15:00	96	67	66	0	0	229	16	125	49	0	0	190	15	27	20	0	0	62	37	243	27	0	1	307	788
Grand Total	549	272	239	0	1	1060	52	531	221	0	0	804	46	74	114	0	1	234	130	1067	99	0	6	1296	**3394**
Approach%	51.8%	25.7%	22.5%	0%		-	6.5%	66%	27.5%	0%		-	19.7%	31.6%	48.7%	0%		-	10%	82.3%	7.6%	0%		-	**-**
Totals %	16.2%	8%	7%	0%		31.2%	1.5%	15.6%	6.5%	0%		23.7%	1.4%	2.2%	3.4%	0%		6.9%	3.8%	31.4%	2.9%	0%		38.2%	**-**
PHF	0.83	0.92	0.91	0		0.91	0.81	0.89	0.88	0		0.88	0.77	0.69	0.75	0		0.94	0.83	0.81	0.92	0		0.85	**-**
Heavy	43	3	12	0		58	1	53	28	0		82	2	6	3	0		11	17	26	10	0		53	**-**
Heavy %	7.8%	1.1%	5%	0%		5.5%	1.9%	10%	12.7%	0%		10.2%	4.3%	8.1%	2.6%	0%		4.7%	13.1%	2.4%	10.1%	0%		4.1%	**-**
Lights	506	269	227	0		1002	51	478	193	0		722	44	68	111	0		223	113	1041	89	0		1243	**-**
Lights %	92.2%	98.9%	95%	0%		94.5%	98.1%	90%	87.3%	0%		89.8%	95.7%	91.9%	97.4%	0%		95.3%	86.9%	97.6%	89.9%	0%		95.9%	**-**
Single-Unit Trucks	21	0	4	0		25	0	20	10	0		30	0	1	1	0		2	2	3	1	0		6	**-**
Single-Unit Trucks %	3.8%	0%	1.7%	0%		2.4%	0%	3.8%	4.5%	0%		3.7%	0%	1.4%	0.9%	0%		0.9%	1.5%	0.3%	1%	0%		0.5%	**-**
Buses	22	3	8	0		33	1	18	14	0		33	2	5	2	0		9	15	17	9	0		41	**-**
Buses %	4%	1.1%	3.3%	0%		3.1%	1.9%	3.4%	6.3%	0%		4.1%	4.3%	6.8%	1.8%	0%		3.8%	11.5%	1.6%	9.1%	0%		3.2%	**-**
Articulated Trucks	0	0	0	0		0	0	15	4	0		19	0	0	0	0		0	0	6	0	0		6	**-**
Articulated Trucks %	0%	0%	0%	0%		0%	0%	2.8%	1.8%	0%		2.4%	0%	0%	0%	0%		0%	0%	0.6%	0%	0%		0.5%	**-**
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	6	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	12.5%		-	-	-	-	75%		**-**
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	12.5%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Spectrum

Turning Movement Count
Location Name: KENNEDY RD N & MAYFIELD RD
Date: Wed, Mar 07, 2018 Deployment Lead: Theo Daglis

Peak Hour: 12:45 PM - 01:45 PM Weather: Overcast (1.3 °C)

Start Time	N Approach KENNEDY RD						E Approach MAYFIELD RD						S Approach KENNEDY RD N						W Approach MAYFIELD RD						Int. Total (15 min)
	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	
12:45:00	60	15	18	0	0	93	14	86	46	0	0	146	7	20	9	0	0	36	28	79	13	0	1	120	395
13:00:00	52	16	19	0	0	87	8	83	43	0	0	134	7	22	10	0	0	39	26	78	13	0	1	117	377
13:15:00	55	22	28	0	0	105	9	107	49	0	0	165	8	15	16	0	0	39	26	108	14	0	1	148	457
13:30:00	56	17	20	0	0	93	17	82	45	0	0	144	7	18	7	0	0	32	30	114	14	0	2	158	427
Grand Total	223	70	85	0	0	378	48	358	183	0	0	589	29	75	42	0	0	146	110	379	54	0	5	543	**1656**
Approach%	59%	18.5%	22.5%	0%		-	8.1%	60.8%	31.1%	0%		-	19.9%	51.4%	28.8%	0%		-	20.3%	69.8%	9.9%	0%		-	**-**
Totals %	13.5%	4.2%	5.1%	0%		22.8%	2.9%	21.6%	11.1%	0%		35.6%	1.8%	4.5%	2.5%	0%		8.8%	6.6%	22.9%	3.3%	0%		32.8%	**-**
PHF	0.93	0.8	0.76	0		0.9	0.71	0.84	0.93	0		0.89	0.91	0.85	0.66	0		0.94	0.92	0.83	0.96	0		0.86	**-**
Heavy	32	3	5	0		40	1	30	23	0		54	0	0	0	0		0	4	28	6	0		38	**-**
Heavy %	14.3%	4.3%	5.9%	0%		10.6%	2.1%	8.4%	12.6%	0%		9.2%	0%	0%	0%	0%		0%	3.6%	7.4%	11.1%	0%		7%	**-**
Lights	191	67	80	0		338	47	328	160	0		535	29	75	42	0		146	106	351	48	0		505	**-**
Lights %	85.7%	95.7%	94.1%	0%		89.4%	97.9%	91.6%	87.4%	0%		90.8%	100%	100%	100%	0%		100%	96.4%	92.6%	88.9%	0%		93%	**-**
Single-Unit Trucks	30	2	4	0		36	0	10	22	0		32	0	0	0	0		0	3	8	2	0		13	**-**
Single-Unit Trucks %	13.5%	2.9%	4.7%	0%		9.5%	0%	2.8%	12%	0%		5.4%	0%	0%	0%	0%		0%	2.7%	2.1%	3.7%	0%		2.4%	**-**
Buses	0	1	1	0		2	1	4	1	0		6	0	0	0	0		0	0	2	4	0		6	**-**
Buses %	0%	1.4%	1.2%	0%		0.5%	2.1%	1.1%	0.5%	0%		1%	0%	0%	0%	0%		0%	0%	0.5%	7.4%	0%		1.1%	**-**
Articulated Trucks	2	0	0	0		2	0	16	0	0		16	0	0	0	0		0	1	18	0	0		19	**-**
Articulated Trucks %	0.9%	0%	0%	0%		0.5%	0%	4.5%	0%	0%		2.7%	0%	0%	0%	0%		0%	0.9%	4.7%	0%	0%		3.5%	**-**
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	5	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	100%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Spectrum

Turning Movement Count
Location Name: KENNEDY RD N & MAYFIELD RD
Date: Wed, Mar 07, 2018 Deployment Lead: Theo Daglis

Peak Hour: 05:00 PM - 06:00 PM Weather: Snow (1.5 °C)

Start Time	N Approach KENNEDY RD						E Approach MAYFIELD RD						S Approach KENNEDY RD N						W Approach MAYFIELD RD						Int. Total (15 min)
	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	
17:00:00	64	31	38	0	2	133	33	218	135	0	0	386	29	69	25	0	0	123	59	156	10	0	2	225	867
17:15:00	40	29	39	0	0	108	32	267	125	0	6	424	15	46	18	0	4	79	56	170	15	0	1	241	852
17:30:00	58	30	41	0	0	129	49	251	131	0	0	431	27	58	25	0	0	110	55	137	27	0	0	219	889
17:45:00	78	40	37	0	0	155	24	236	114	0	0	374	27	53	21	0	0	101	55	162	18	0	4	235	865
Grand Total	240	130	155	0	2	525	138	972	505	0	6	1615	98	226	89	0	4	413	225	625	70	0	7	920	**3473**
Approach%	45.7%	24.8%	29.5%	0%		-	8.5%	60.2%	31.3%	0%		-	23.7%	54.7%	21.5%	0%		-	24.5%	67.9%	7.6%	0%		-	**-**
Totals %	6.9%	3.7%	4.5%	0%		15.1%	4%	28%	14.5%	0%		46.5%	2.8%	6.5%	2.6%	0%		11.9%	6.5%	18%	2%	0%		26.5%	**-**
PHF	0.77	0.81	0.95	0		0.85	0.7	0.91	0.94	0		0.94	0.84	0.82	0.89	0		0.84	0.95	0.92	0.65	0		0.95	**-**
Heavy	8	0	0	0		8	0	21	2	0		23	0	1	0	0		1	1	28	4	0		33	**-**
Heavy %	3.3%	0%	0%	0%		1.5%	0%	2.2%	0.4%	0%		1.4%	0%	0.4%	0%	0%		0.2%	0.4%	4.5%	5.7%	0%		3.6%	**-**
Lights	232	130	155	0		517	138	951	503	0		1592	98	225	89	0		412	224	597	66	0		887	**-**
Lights %	96.7%	100%	100%	0%		98.5%	100%	97.8%	99.6%	0%		98.6%	100%	99.6%	100%	0%		99.8%	99.6%	95.5%	94.3%	0%		96.4%	**-**
Single-Unit Trucks	7	0	0	0		7	0	5	1	0		6	0	0	0	0		0	0	15	0	0		15	**-**
Single-Unit Trucks %	2.9%	0%	0%	0%		1.3%	0%	0.5%	0.2%	0%		0.4%	0%	0%	0%	0%		0%	0%	2.4%	0%	0%		1.6%	**-**
Buses	1	0	0	0		1	0	1	1	0		2	0	1	0	0		1	1	0	4	0		5	**-**
Buses %	0.4%	0%	0%	0%		0.2%	0%	0.1%	0.2%	0%		0.1%	0%	0.4%	0%	0%		0.2%	0.4%	0%	5.7%	0%		0.5%	**-**
Articulated Trucks	0	0	0	0		0	0	15	0	0		15	0	0	0	0		0	0	13	0	0		13	**-**
Articulated Trucks %	0%	0%	0%	0%		0%	0%	1.5%	0%	0%		0.9%	0%	0%	0%	0%		0%	0%	2.1%	0%	0%		1.4%	**-**
Pedestrians	-	-	-	-	2	-	-	-	-	-	6	-	-	-	-	-	4	-	-	-	-	-	7	-	**-**
Pedestrians%	-	-	-	-	10.5%		-	-	-	-	31.6%		-	-	-	-	21.1%		-	-	-	-	36.8%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Spectrum

Turning Movement Count
Location Name: KENNEDY RD N & MAYFIELD RD
Date: Wed, Mar 07, 2018 Deployment Lead: Theo Daglis

Peak Hour: 07:30 AM - 08:30 AM **Weather: Overcast (0 °C)**

	Bicycles on Crosswalk	Pedestrians
N	1	0
S	0	1
E	0	0
W	0	6

Spectrum

Turning Movement Count
Location Name: KENNEDY RD N & MAYFIELD RD
Date: Wed, Mar 07, 2018 Deployment Lead: Theo Daglis

Peak Hour: 12:45 PM - 01:45 PM **Weather: Overcast (1.3 °C)**

	Bicycles on Crosswalk	Pedestrians
N	0	0
S	0	0
E	0	0
W	0	5

Spectrum

Turning Movement Count
Location Name: KENNEDY RD N & MAYFIELD RD
Date: Wed, Mar 07, 2018 Deployment Lead: Theo Daglis

Peak Hour: 05:00 PM - 06:00 PM **Weather: Snow (1.5 °C)**

	Bicycles on Crosswalk	Pedestrians
N	0	2
S	0	4
E	0	6
W	0	7

Spectrum

Turning Movement Count
Location Name: MAYFIELD RD & HEART LAKE RD
Date: Tue, Nov 29, 2016 Deployment Lead: Chris Koukaras

Turning Movement Count (7 . MAYFIELD RD & HEART LAKE RD) CustID: 01413759 MioID: 369877

Start Time	N Approach HEART LAKE ROAD						E Approach MAYFIELD RD						S Approach HEART LAKE ROAD						W Approach MAYFIELD RD						Int. Total (15 min)	Int. Total (1 hr)
	Left N:E	Thru N:S	Right N:W	U-Turn N:N	Peds N:	Approach Total	Left E:S	Thru E:W	Right E:N	U-Turn E:E	Peds E:	Approach Total	Left S:W	Thru S:N	Right S:E	U-Turn S:S	Peds S:	Approach Total	Left W:N	Thru W:E	Right W:S	U-Turn W:W	Peds W:	Approach Total		
07:00:00	15	13	3	0	0	31	2	150	1	0	0	153	14	4	1	0	0	19	2	279	74	0	0	355	558	
07:15:00	16	11	3	0	0	30	13	145	7	0	0	165	19	2	5	0	0	26	4	267	94	0	0	365	586	
07:30:00	8	23	8	0	0	39	24	179	4	0	0	207	22	4	6	0	0	32	8	302	131	0	0	441	719	
07:45:00	6	28	12	0	0	46	37	196	2	0	0	235	25	2	6	0	0	33	6	300	132	0	0	438	752	2615
08:00:00	12	16	7	0	0	35	42	186	1	0	0	229	25	4	2	0	0	31	4	276	144	0	0	424	719	2776
08:15:00	7	11	15	0	0	33	13	167	7	0	0	187	31	2	4	0	0	37	3	240	98	1	0	342	599	2789
08:30:00	5	13	8	0	0	26	9	153	3	0	0	165	40	3	4	0	0	47	2	270	71	0	0	343	581	2651
08:45:00	11	9	4	0	0	24	11	120	4	0	0	135	21	2	5	0	0	28	8	223	56	0	0	287	474	2373
BREAK																										
11:00:00	6	1	4	0	0	11	0	109	9	0	0	118	18	6	3	0	0	27	5	142	19	0	0	166	322	
11:15:00	5	3	3	0	0	11	1	117	2	0	0	120	8	2	1	0	0	11	1	129	18	0	0	148	290	
11:30:00	9	3	2	0	0	14	1	90	7	0	0	98	12	2	3	0	0	17	2	148	16	0	0	166	295	
11:45:00	3	4	6	0	0	13	5	128	3	0	0	136	13	2	2	0	0	17	4	157	16	0	0	177	343	1250
12:00:00	4	2	4	0	0	10	3	123	6	0	0	132	8	4	6	0	0	18	1	108	30	0	0	139	299	1227
12:15:00	4	0	2	0	0	6	2	109	6	0	0	117	20	3	1	0	0	24	3	149	11	0	0	163	310	1247
12:30:00	5	3	3	0	0	11	2	113	1	0	0	116	18	4	4	0	0	26	0	162	19	0	0	181	334	1286
12:45:00	11	1	2	0	0	14	4	135	6	0	0	145	18	2	5	0	0	25	6	141	18	0	0	165	349	1292
13:00:00	9	9	0	0	0	18	7	129	1	0	0	137	21	3	1	0	0	25	3	141	16	0	0	160	340	1333
13:15:00	5	4	4	0	0	13	3	111	4	0	0	118	16	3	4	0	0	23	0	145	13	0	0	158	312	1335
13:30:00	5	3	3	0	0	11	3	122	4	0	0	129	19	2	4	0	0	25	0	116	24	0	0	140	305	1306
13:45:00	7	3	2	0	0	12	5	139	4	0	0	148	14	8	7	0	0	29	2	140	15	0	0	157	346	1303
BREAK																										
15:00:00	7	2	7	0	0	16	5	234	10	0	0	249	47	5	7	0	0	59	7	168	37	0	0	212	536	
15:15:00	2	6	3	0	0	11	8	221	8	0	0	237	77	10	4	0	0	91	5	148	22	0	0	175	514	
15:30:00	7	8	3	0	0	18	4	271	9	0	0	284	64	3	6	0	0	73	10	168	36	0	0	214	589	
15:45:00	13	7	5	0	0	25	6	209	18	0	0	233	64	4	6	0	0	74	12	176	38	0	0	226	558	2197
16:00:00	6	8	6	0	0	20	7	291	10	0	0	308	62	8	3	0	0	73	10	212	25	0	0	247	648	2309
16:15:00	5	8	3	0	0	16	8	267	7	2	0	284	76	10	3	0	0	89	6	193	29	0	0	228	617	2412
16:30:00	9	4	5	0	0	18	13	306	13	0	0	332	84	10	2	0	0	96	7	173	24	0	0	204	650	2473
16:45:00	7	6	7	0	0	20	9	285	12	0	0	306	77	14	3	0	0	94	8	218	36	0	0	262	682	2597
17:00:00	7	2	4	0	0	13	6	138	2	0	0	146	42	8	4	0	0	54	1	226	31	0	0	258	471	2420
17:15:00	12	6	8	0	0	26	2	314	8	0	0	324	80	3	6	0	0	89	8	197	36	0	0	241	680	2483
17:30:00	10	12	8	0	0	30	4	350	9	0	0	363	78	3	3	0	0	84	5	201	30	0	0	236	713	2546
17:45:00	5	3	8	0	0	16	4	317	16	0	0	337	74	1	4	0	0	79	3	157	34	0	0	194	626	2490
Grand Total	243	232	162	0	0	637	263	5924	204	2	0	6393	1207	143	125	0	0	1475	146	6072	1393	1	0	7612	**16117**	-
Approach%	38.1%	36.4%	25.4%	0%		-	4.1%	92.7%	3.2%	0%		-	81.8%	9.7%	8.5%	0%		-	1.9%	79.8%	18.3%	0%		-	**-**	-
Totals %	1.5%	1.4%	1%	0%		4%	1.6%	36.8%	1.3%	0%		39.7%	7.5%	0.9%	0.8%	0%		9.2%	0.9%	37.7%	8.6%	0%		47.2%	**-**	-
Heavy	14	4	10	0		-	8	475	12	0		-	28	3	6	0		-	8	431	31	0		-	**-**	-
Heavy %	5.8%	1.7%	6.2%	0%		-	3%	8%	5.9%	0%		-	2.3%	2.1%	4.8%	0%		-	5.5%	7.1%	2.2%	0%		-	**-**	-
Bicycles	0	0	0	0		-	0	0	0	0		-	1	0	1	0		-	0	0	1	0		-	**-**	-
Bicycle %	0%	0%	0%	0%		-	0%	0%	0%	0%		-	0.1%	0%	0.8%	0%		-	0%	0%	0.1%	0%		-	**-**	-

Spectrum

Turning Movement Count
Location Name: MAYFIELD RD & HEART LAKE RD
Date: Tue, Nov 29, 2016 Deployment Lead: Chris Koukaras

Peak Hour: 07:30 AM - 08:30 AM Weather: Mostly Cloudy (6.2 °C)

Start Time	N Approach HEART LAKE ROAD						E Approach MAYFIELD RD						S Approach HEART LAKE ROAD						W Approach MAYFIELD RD						Int. Total (15 min)
	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	
07:30:00	8	23	8	0	0	39	24	179	4	0	0	207	22	4	6	0	0	32	8	302	131	0	0	441	719
07:45:00	6	28	12	0	0	46	37	196	2	0	0	235	25	2	6	0	0	33	6	300	132	0	0	438	752
08:00:00	12	16	7	0	0	35	42	186	1	0	0	229	25	4	2	0	0	31	4	276	144	0	0	424	719
08:15:00	7	11	15	0	0	33	13	167	7	0	0	187	31	2	4	0	0	37	3	240	98	1	0	342	599
Grand Total	33	78	42	0	0	153	116	728	14	0	0	858	103	12	18	0	0	133	21	1118	505	1	0	1645	**2789**
Approach%	21.6%	51%	27.5%	0%		-	13.5%	84.8%	1.6%	0%		-	77.4%	9%	13.5%	0%		-	1.3%	68%	30.7%	0.1%		-	**-**
Totals %	1.2%	2.8%	1.5%	0%		5.5%	4.2%	26.1%	0.5%	0%		30.8%	3.7%	0.4%	0.6%	0%		4.8%	0.8%	40.1%	18.1%	0%		59%	**-**
PHF	0.69	0.7	0.7	0		0.83	0.69	0.93	0.5	0		0.91	0.83	0.75	0.75	0		0.9	0.66	0.93	0.88	0.25		0.93	**-**
Heavy	0	1	0	0		1	3	87	4	0		94	5	0	0	0		5	1	63	11	0		75	**-**
Heavy %	0%	1.3%	0%	0%		0.7%	2.6%	12%	28.6%	0%		11%	4.9%	0%	0%	0%		3.8%	4.8%	5.6%	2.2%	0%		4.6%	**-**
Lights	33	77	42	0		152	113	641	10	0		764	98	12	18	0		128	20	1055	494	1		1570	**-**
Lights %	100%	98.7%	100%	0%		99.3%	97.4%	88%	71.4%	0%		89%	95.1%	100%	100%	0%		96.2%	95.2%	94.4%	97.8%	100%		95.4%	**-**
Single-Unit Trucks	0	0	0	0		0	0	51	3	0		54	0	0	0	0		0	0	32	1	0		33	**-**
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	7%	21.4%	0%		6.3%	0%	0%	0%	0%		0%	0%	2.9%	0.2%	0%		2%	**-**
Buses	0	0	0	0		0	2	21	1	0		24	5	0	0	0		5	1	27	10	0		38	**-**
Buses %	0%	0%	0%	0%		0%	1.7%	2.9%	7.1%	0%		2.8%	4.9%	0%	0%	0%		3.8%	4.8%	2.4%	2%	0%		2.3%	**-**
Articulated Trucks	0	1	0	0		1	1	15	0	0		16	0	0	0	0		0	0	4	0	0		4	**-**
Articulated Trucks %	0%	1.3%	0%	0%		0.7%	0.9%	2.1%	0%	0%		1.9%	0%	0%	0%	0%		0%	0%	0.4%	0%	0%		0.2%	**-**
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	%		-	-	-	-	%		-	-	-	-	%		-	-	-	-	%		**-**

Spectrum

Turning Movement Count
Location Name: MAYFIELD RD & HEART LAKE RD
Date: Tue, Nov 29, 2016 Deployment Lead: Chris Koukaras

Peak Hour: 12:30 PM - 01:30 PM Weather: Mostly Cloudy (10.7 °C)

Start Time	N Approach HEART LAKE ROAD						E Approach MAYFIELD RD						S Approach HEART LAKE ROAD						W Approach MAYFIELD RD						Int. Total (15 min)
	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	
12:30:00	5	3	3	0	0	11	2	113	1	0	0	116	18	4	4	0	0	26	0	162	19	0	0	181	334
12:45:00	11	1	2	0	0	14	4	135	6	0	0	145	18	2	5	0	0	25	6	141	18	0	0	165	349
13:00:00	9	9	0	0	0	18	7	129	1	0	0	137	21	3	1	0	0	25	3	141	16	0	0	160	340
13:15:00	5	4	4	0	0	13	3	111	4	0	0	118	16	3	4	0	0	23	0	145	13	0	0	158	312
Grand Total	30	17	9	0	0	56	16	488	12	0	0	516	73	12	14	0	0	99	9	589	66	0	0	664	**1335**
Approach%	53.6%	30.4%	16.1%	0%		-	3.1%	94.6%	2.3%	0%		-	73.7%	12.1%	14.1%	0%		-	1.4%	88.7%	9.9%	0%		-	**-**
Totals %	2.2%	1.3%	0.7%	0%		4.2%	1.2%	36.6%	0.9%	0%		38.7%	5.5%	0.9%	1%	0%		7.4%	0.7%	44.1%	4.9%	0%		49.7%	**-**
PHF	0.68	0.47	0.56	0		0.78	0.57	0.9	0.5	0		0.89	0.87	0.75	0.7	0		0.95	0.38	0.91	0.87	0		0.92	**-**
Heavy	2	2	1	0		5	1	69	0	0		70	1	0	0	0		1	0	45	1	0		46	**-**
Heavy %	6.7%	11.8%	11.1%	0%		8.9%	6.3%	14.1%	0%	0%		13.6%	1.4%	0%	0%	0%		1%	0%	7.6%	1.5%	0%		6.9%	**-**
Lights	28	15	8	0		51	15	419	12	0		446	72	12	14	0		98	9	544	65	0		618	**-**
Lights %	93.3%	88.2%	88.9%	0%		91.1%	93.8%	85.9%	100%	0%		86.4%	98.6%	100%	100%	0%		99%	100%	92.4%	98.5%	0%		93.1%	**-**
Single-Unit Trucks	2	1	1	0		4	0	55	0	0		55	1	0	0	0		1	0	36	1	0		37	**-**
Single-Unit Trucks %	6.7%	5.9%	11.1%	0%		7.1%	0%	11.3%	0%	0%		10.7%	1.4%	0%	0%	0%		1%	0%	6.1%	1.5%	0%		5.6%	**-**
Buses	0	1	0	0		1	0	2	0	0		2	0	0	0	0		0	0	2	0	0		2	**-**
Buses %	0%	5.9%	0%	0%		1.8%	0%	0.4%	0%	0%		0.4%	0%	0%	0%	0%		0%	0%	0.3%	0%	0%		0.3%	**-**
Articulated Trucks	0	0	0	0		0	1	12	0	0		13	0	0	0	0		0	0	7	0	0		7	**-**
Articulated Trucks %	0%	0%	0%	0%		0%	6.3%	2.5%	0%	0%		2.5%	0%	0%	0%	0%		0%	0%	1.2%	0%	0%		1.1%	**-**
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	%		-	-	-	-	%		-	-	-	-	%		-	-	-	-	%		**-**

Spectrum

Turning Movement Count
Location Name: MAYFIELD RD & HEART LAKE RD
Date: Tue, Nov 29, 2016 Deployment Lead: Chris Koukaras

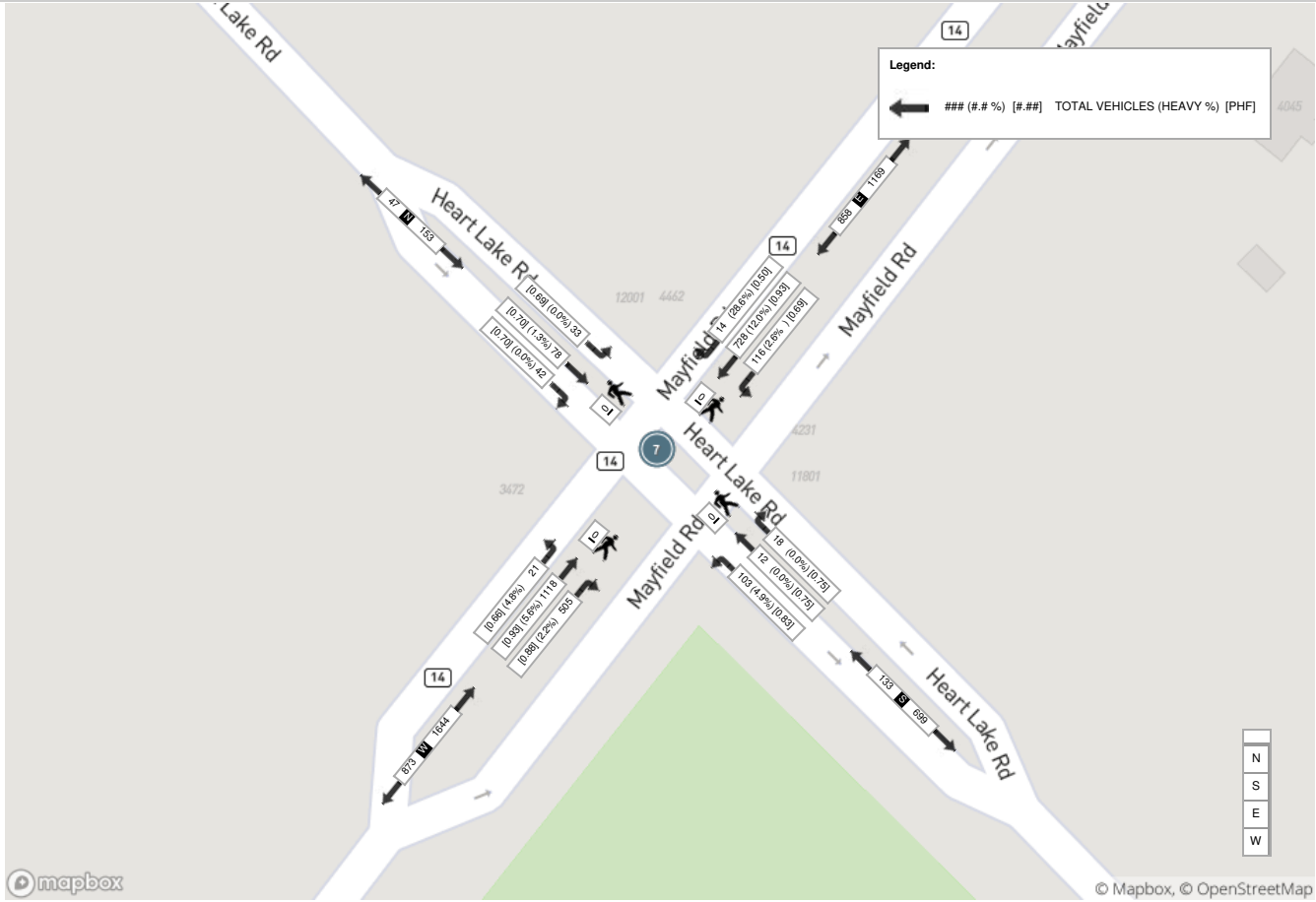
Peak Hour: 04:00 PM - 05:00 PM Weather: Mostly Cloudy (13.2 °C)

Start Time	N Approach HEART LAKE ROAD						E Approach MAYFIELD RD						S Approach HEART LAKE ROAD						W Approach MAYFIELD RD						Int. Total (15 min)
	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	Left	Thru	Right	U-Turn	Peds	Approach Total	
16:00:00	6	8	6	0	0	20	7	291	10	0	0	308	62	8	3	0	0	73	10	212	25	0	0	247	648
16:15:00	5	8	3	0	0	16	8	267	7	2	0	284	76	10	3	0	0	89	6	193	29	0	0	228	617
16:30:00	9	4	5	0	0	18	13	306	13	0	0	332	84	10	2	0	0	96	7	173	24	0	0	204	650
16:45:00	7	6	7	0	0	20	9	285	12	0	0	306	77	14	3	0	0	94	8	218	36	0	0	262	682
Grand Total	27	26	21	0	0	74	37	1149	42	2	0	1230	299	42	11	0	0	352	31	796	114	0	0	941	**2597**
Approach%	36.5%	35.1%	28.4%	0%		-	3%	93.4%	3.4%	0.2%		-	84.9%	11.9%	3.1%	0%		-	3.3%	84.6%	12.1%	0%		-	**-**
Totals %	1%	1%	0.8%	0%		2.8%	1.4%	44.2%	1.6%	0.1%		47.4%	11.5%	1.6%	0.4%	0%		13.6%	1.2%	30.7%	4.4%	0%		36.2%	**-**
PHF	0.75	0.81	0.75	0		0.93	0.71	0.94	0.81	0.25		0.93	0.89	0.75	0.92	0		0.92	0.78	0.91	0.79	0		0.9	**-**
Heavy	2	1	1	0		4	2	37	1	0		40	4	0	1	0		5	1	72	7	0		80	**-**
Heavy %	7.4%	3.8%	4.8%	0%		5.4%	5.4%	3.2%	2.4%	0%		3.3%	1.3%	0%	9.1%	0%		1.4%	3.2%	9%	6.1%	0%		8.5%	**-**
Lights	25	25	20	0		70	35	1112	41	2		1190	295	42	10	0		347	30	724	107	0		861	**-**
Lights %	92.6%	96.2%	95.2%	0%		94.6%	94.6%	96.8%	97.6%	100%		96.7%	98.7%	100%	90.9%	0%		98.6%	96.8%	91%	93.9%	0%		91.5%	**-**
Single-Unit Trucks	2	0	0	0		2	1	23	0	0		24	1	0	0	0		1	0	35	2	0		37	**-**
Single-Unit Trucks %	7.4%	0%	0%	0%		2.7%	2.7%	2%	0%	0%		2%	0.3%	0%	0%	0%		0.3%	0%	4.4%	1.8%	0%		3.9%	**-**
Buses	0	1	1	0		2	1	7	1	0		9	3	0	1	0		4	1	15	5	0		21	**-**
Buses %	0%	3.8%	4.8%	0%		2.7%	2.7%	0.6%	2.4%	0%		0.7%	1%	0%	9.1%	0%		1.1%	3.2%	1.9%	4.4%	0%		2.2%	**-**
Articulated Trucks	0	0	0	0		0	0	7	0	0		7	0	0	0	0		0	0	22	0	0		22	**-**
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0.6%	0%	0%		0.6%	0%	0%	0%	0%		0%	0%	2.8%	0%	0%		2.3%	**-**
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	0	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	%		-	-	-	-	%		-	-	-	-	%		-	-	-	-	%		**-**

Spectrum

Turning Movement Count
Location Name: MAYFIELD RD & HEART LAKE RD
Date: Tue, Nov 29, 2016 Deployment Lead: Chris Koukaras

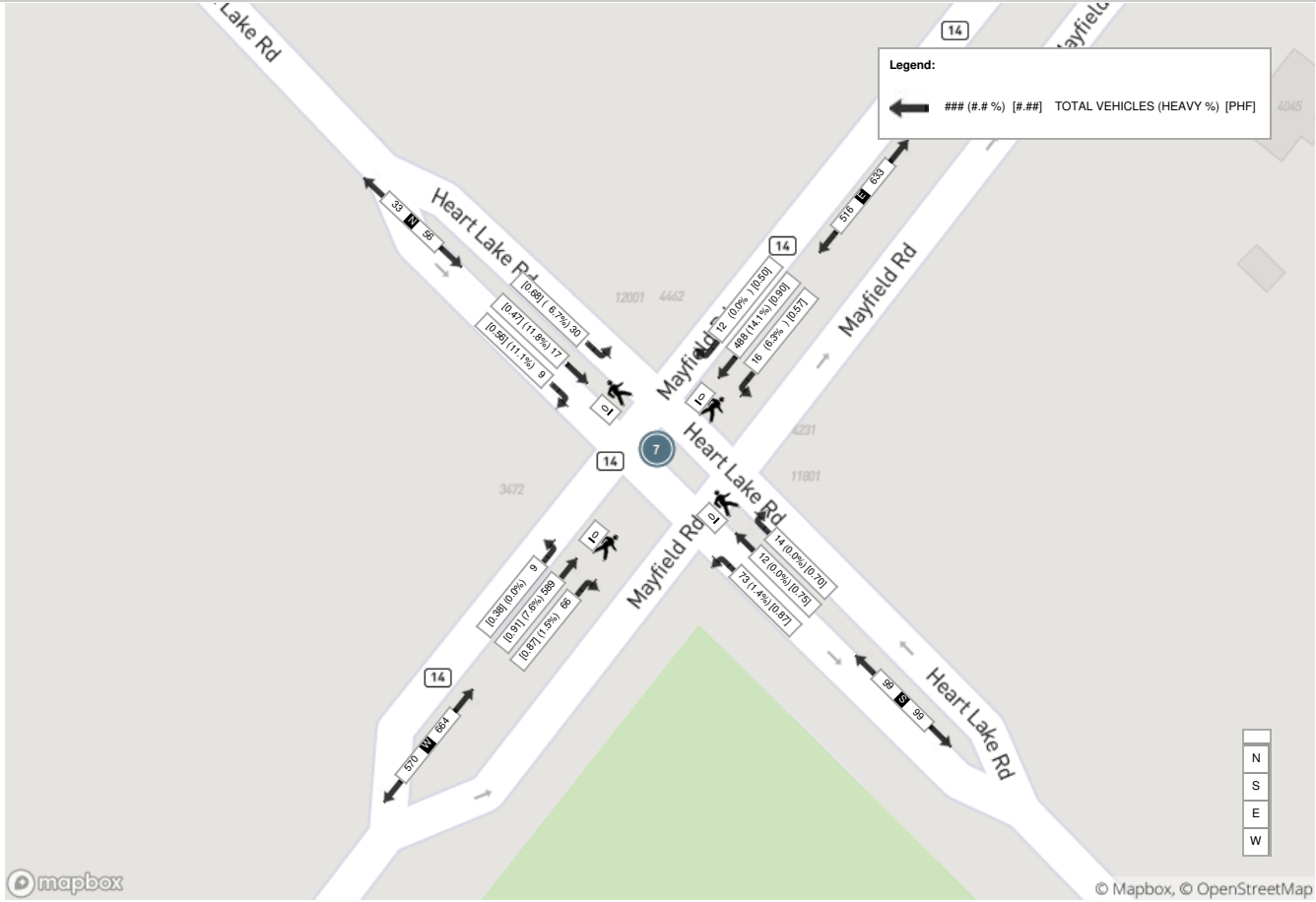
Peak Hour: 07:30 AM - 08:30 AM **Weather: Mostly Cloudy (6.2 °C)**



Spectrum

Turning Movement Count
Location Name: MAYFIELD RD & HEART LAKE RD
Date: Tue, Nov 29, 2016 Deployment Lead: Chris Koukaras

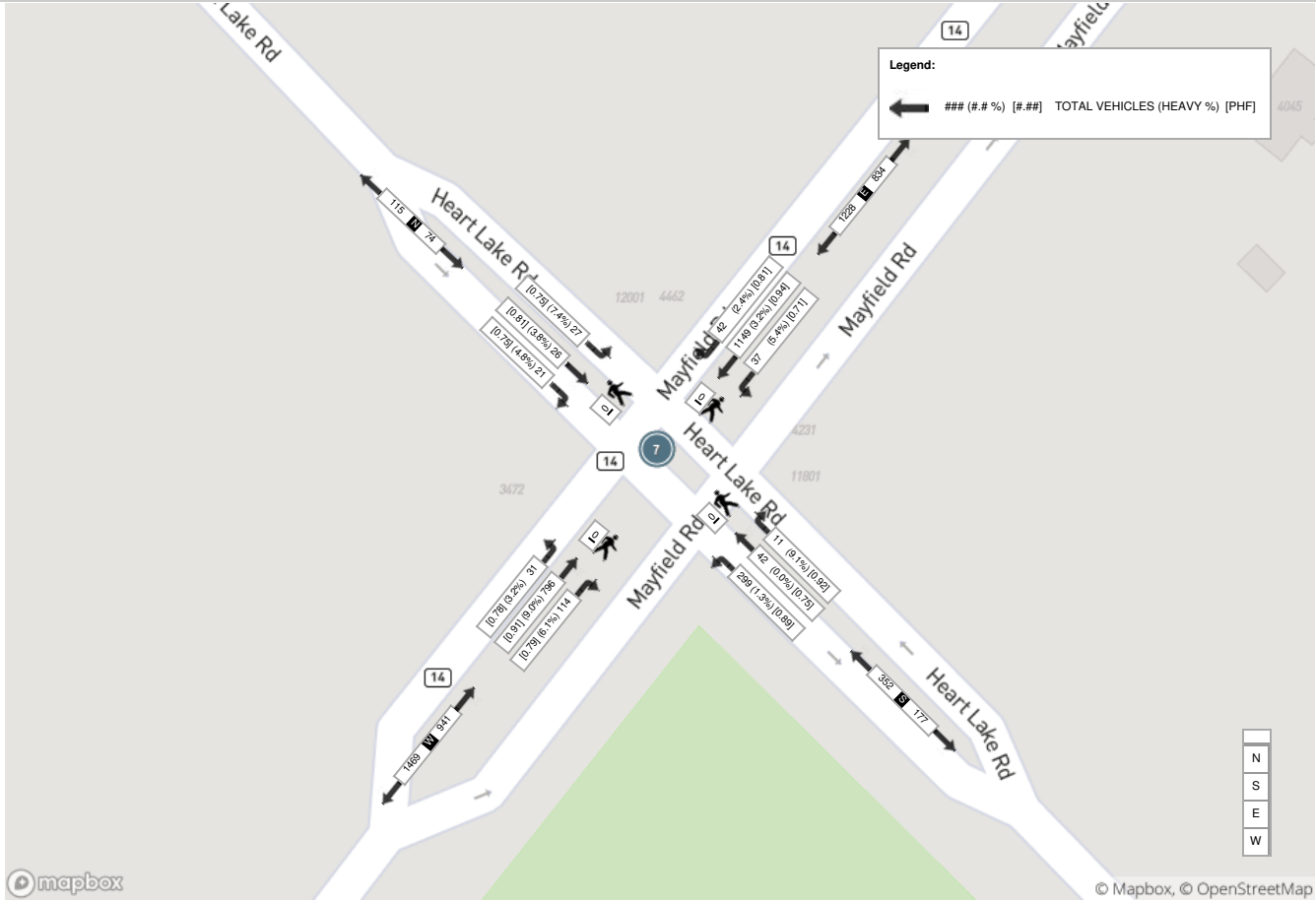
Peak Hour: 12:30 PM - 01:30 PM Weather: Mostly Cloudy (10.7 °C)



Spectrum

Turning Movement Count
Location Name: MAYFIELD RD & HEART LAKE RD
Date: Tue, Nov 29, 2016 Deployment Lead: Chris Koukaras

Peak Hour: 04:00 PM - 05:00 PM Weather: Mostly Cloudy (13.2 °C)



Date: December 24, 2020
From: Brett Lipson, Valcoustics Ltd.
Re: Traffic Data Request – Mayfield Road (0.3 KM East of Kennedy Road)

Brett,
As per your request, we are providing the following 2020 traffic data:

	Existing	Ultimate
24 Hour Traffic Volume	24,569	48,600
# of Lanes	4	6
Day/Night Split	86/14	86/14
Day Trucks (% of Total Volume)	2.28% Medium 4.36% Heavy	2.28% Medium 4.36% Heavy
Night Trucks (% of Total Volume)	1.91% Medium 3.72% Heavy	1.91% Medium 3.72% Heavy
Right-of-Way Width	50 meters	
Posted Speed Limit	60 km/h	

Please note:

1. The current volume is not the Annual Average Daily Traffic, but the averaged raw volumes over three data collection days. If you need the Annual Average Traffic Volume, please visit the Peel Open Data website below: http://opendata.peelregion.ca/data-categories/transportation/traffic-count-stations.aspx
2. The ultimate volume is the planned volume during a level of service 'D' where a 2 second vehicle headway and a volume to capacity ratio of 0.9 is assumed. Traffic signals and hourly variations in traffic are also incorporated into the ultimate volume.

If you require further assistance, please contact me at (905) 791-7800 ext. 4810.

Regards,

Tiggy Chen
Co-op Student, Transportation System Planning
Transportation Division, Public Works Services, Region of Peel
10 Peel Centre Drive, Suite B, 4th Floor
Brampton, ON L6T 4B9
W: (905) 791-7800 x4810 C: (647) 918-2827
E: tiggy.chen@peelregion.ca

nexTrans
CONSULTING ENGINEERS

nextrans.ca

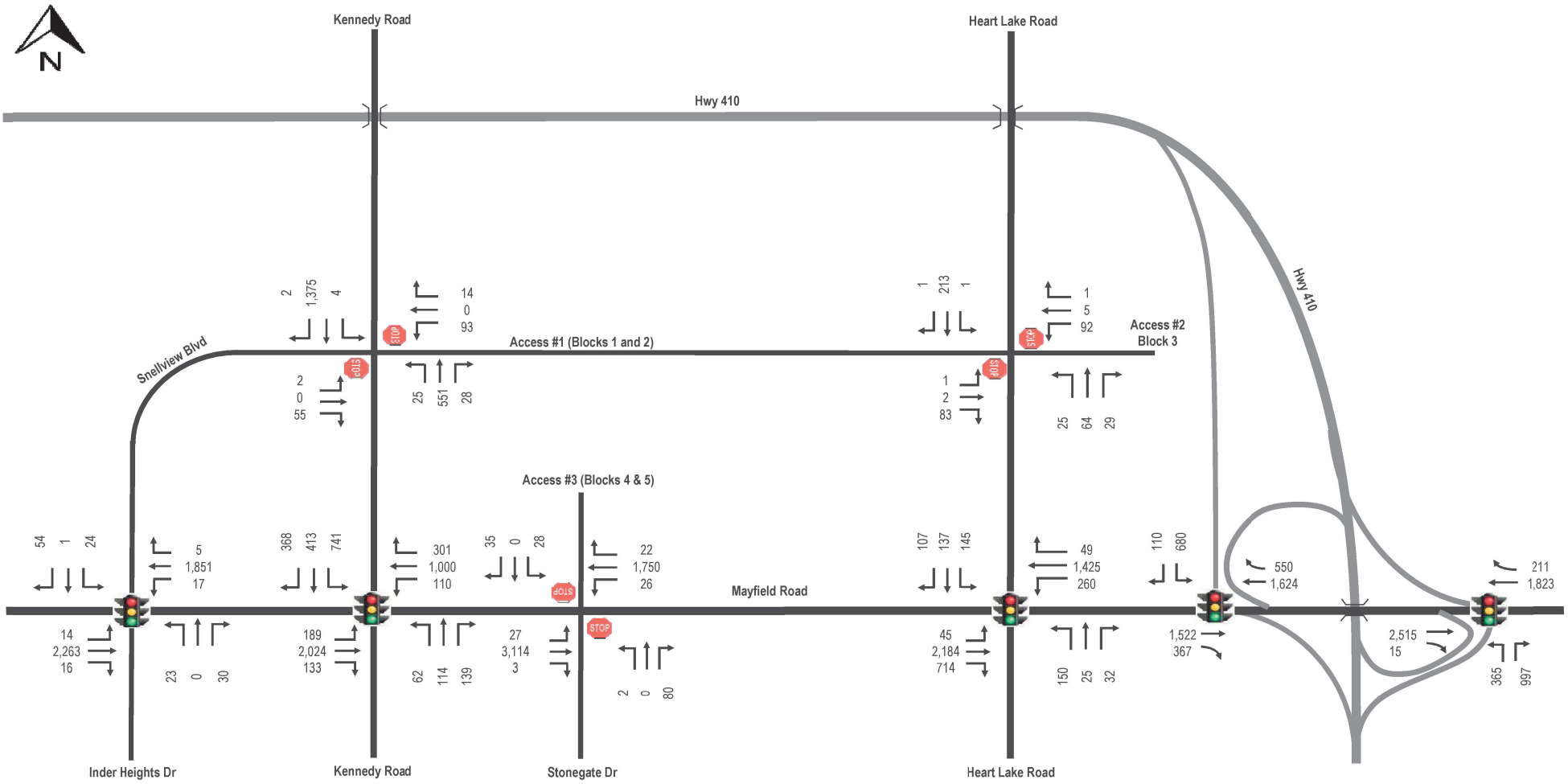
Transportation Impact Study

PROPOSED RESIDENTIAL SUBDIVISION

Snell's Hollow (Heart Lake Rd & Mayfield Rd),
TOWN OF CALEDON, ONTARIO

March 2021
Project No: NT-20-018

DRAFT



Not to Scale

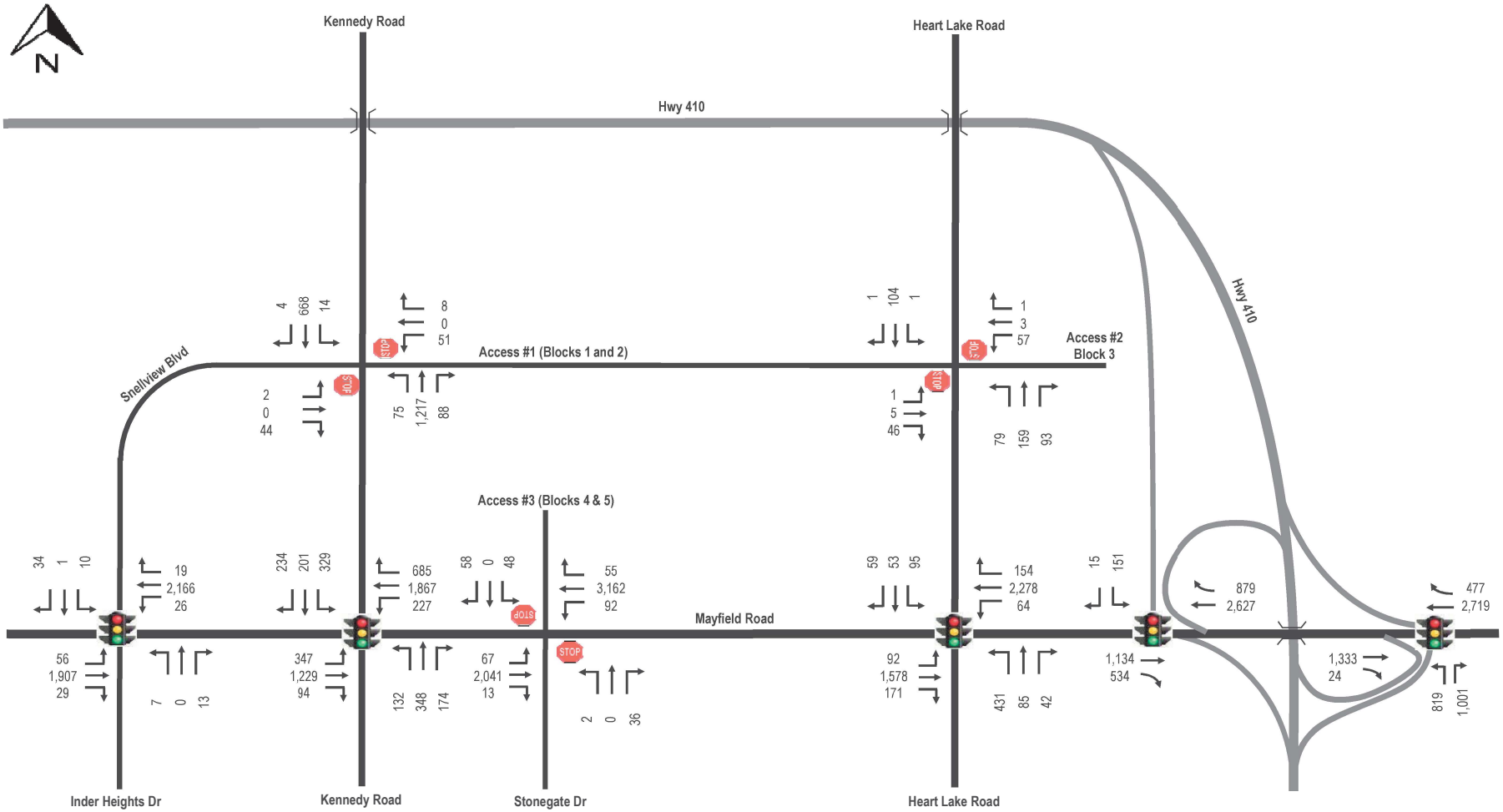
nexTrans CONSULTING ENGINEERS

Legend: XX Peak Hour Traffic Volumes

Stop Sign

Signalized Intersection

Figure 14A - 2033 Future Total Traffic Volumes
AM Peak Hour



Not to Scale

nexTrans CONSULTING ENGINEERS

Legend: XX Peak Hour Traffic Volumes

Stop Sign

Signalized Intersection

Figure 14B - 2033 Future Total Traffic Volumes
PM Peak Hour

APPENDIX B

ENVIRONMENTAL NOISE GUIDELINES

APPENDIX B

ENVIRONMENTAL NOISE GUIDELINES

MINISTRY OF THE ENVIRONMENT, CONSERVATION AND PARKS (MECP)

Reference: MECP Publication NPC-300, October 2013: *"Environmental Noise Guideline, Stationary and Transportation Sources – Approval and Planning"*.

SPACE	SOURCE	TIME PERIOD	CRITERION
Living/dining, den areas of residences, hospitals, nursing homes, schools, daycare centres, etc.	Road	07:00 to 23:00	45 dBA
	Rail	07:00 to 23:00	40 dBA
	Aircraft	24-hour period	NEF/NEP 5
Living/dining, den areas of residences, hospitals, nursing homes, etc. (except schools or daycare centres)	Road	23:00 to 07:00	45 dBA
	Rail	23:00 to 07:00	40 dBA
	Aircraft	24-hour period	NEF/NEP 5
Sleeping quarters	Road	07:00 to 23:00	45 dBA
	Rail	07:00 to 23:00	40 dBA
	Aircraft	24-hour period	NEF/NEP 0
Sleeping quarters	Road	23:00 to 07:00	40 dBA
	Rail	23:00 to 07:00	35 dBA
	Aircraft	24-hour period	NEF/NEP 0
Outdoor Living Areas	Road and Rail	07:00 to 23:00	55 dBA
Outdoor Point of Reception	Aircraft	24-hour period	NEF/NEP 30[#]
	Stationary Source		
	Class 1 Area	07:00 to 19:00[(1)]	50[*] dBA
		19:00 to 23:00[(1)]	50[*] dBA
	Class 2 Area	07:00 to 19:00[(2)]	50[*] dBA
		19:00 to 23:00[(2)]	45[*] dBA
	Class 3 Area	07:00 to 19:00[(3)]	45[*] dBA
		19:00 to 23:00[(3)]	40[*] dBA
	Class 4 Area	07:00 to 19:00[(4)]	55[*] dBA
		19:00 to 23:00[(4)]	55[*] dBA

…./cont'd

SPACE	SOURCE	TIME PERIOD	CRITERION
Plane of a Window of Noise Sensitive Spaces	Stationary Source		
	Class 1 Area	07:00 to 19:00(1)	50* dBA
		19:00 to 23:00(1)	50* dBA
		23:00 to 07:00(1)	45* dBA
	Class 2 Area	07:00 to 19:00(2)	50* dBA
		19:00 to 23:00(2)	50* dBA
		23:00 to 07:00(2)	45* dBA
	Class 3 Area	07:00 to 19:00(3)	45* dBA
		19:00 to 23:00(3)	45* dBA
		23:00 to 07:00(3)	40* dBA
	Class 4 Area	07:00 to 19:00(4)	60* dBA
		19:00 to 23:00(4)	60* dBA
		23:00 to 07:00(4)	55* dBA

\# may not apply to in-fill or re-development.
* or the minimum hourly background sound exposure $L_{eq(1)}$, due to road traffic, if higher.
(1) Class 1 Area: Urban.
(2) Class 2 Area: Urban during day; rural-like evening and night.
(3) Class 3 Area: Rural.
(4) Class 4 Area: Subject to land use planning authority's approval.

Reference: MECP Publication ISBN 0-7729-2804-5, 1987: *"Environmental Noise Assessment in Land-Use Planning"*.

EXCESS ABOVE RECOMMENDED SOUND LEVEL LIMITS (dBA)	CHANGE IN SUBJECTIVE LOUDNESS ABOVE	MAGNITUDE OF THE NOISE PROBLEM	NOISE CONTROL MEASURES (OR ACTION TO BE TAKEN)
No excess (<55 dBA)	—	No expected noise problem	None
1 to 5 inclusive (56 to 60 dBA)	Noticeably louder	Slight noise impact	If no physical measures are taken, then prospective purchasers or tenants should be made aware by suitable warning clauses.
6 to 10 inclusive (61 - 65 dBA)	Almost twice as loud	Definite noise impact	Recommended.
11 to 15 inclusive (66 - 70 dBA)	Almost three times as loud	Serious noise impact	Strongly Recommended.
16 and over (>70 dBA)	Almost four times as loud	Very serious noise impact	Strongly Recommended (may be mandatory).

APPENDIX C

SAMPLE SOUND LEVEL CALCULATION

```
STAMSON 5.04        NORMAL REPORT        Date: 05-07-2021 14:38:52
MINISTRY OF ENVIRONMENT, CONSERVATION AND PARKS/ NOISE ASSESSMENT

Filename: b.te                  Time Period: Day/Night 16/8 hours
Description: Location 2 - North Facade

Road data, segment # 1: 410 SEB (day/night)
-------------------------------------------
Car traffic volume  : 41137/20569 veh/TimePeriod
Medium truck volume :   774/387   veh/TimePeriod
Heavy truck volume  :  2322/1161  veh/TimePeriod
Posted speed limit  :   100 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 1: 410 SEB (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  :  63.00 / 63.00  m
Receiver height           :   4.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: 410 NWB (day/night)
-------------------------------------------
Car traffic volume  : 41137/20569 veh/TimePeriod
Medium truck volume :   774/387   veh/TimePeriod
Heavy truck volume  :  2322/1161  veh/TimePeriod
Posted speed limit  :   100 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 2: 410 NWB (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  :  78.00 / 78.00  m
Receiver height           :   4.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 3: Kennedy (day/night)
-------------------------------------------
Car traffic volume  : 21139/2349  veh/TimePeriod  *
Medium truck volume :   882/98    veh/TimePeriod  *
Heavy truck volume  :   588/65    veh/TimePeriod  *
Posted speed limit  :    60 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):  21440
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :   8.00
    Medium Truck % of Total Volume     :   3.90
    Heavy Truck  % of Total Volume     :   2.60
    Day (16 hrs) % of Total Volume     :  90.00
```

```
Data for Segment # 3: Kennedy (day/night)
-----------------------------------------
Angle1   Angle2           :   0.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  28.00 / 28.00  m
Receiver height           :   4.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: 410 SEB (day)
----------------------------------

Source height = 1.51 m

ROAD (0.00 + 67.71 + 0.00) = 67.71 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.57  78.80   0.00  -9.78  -1.30   0.00   0.00   0.00  67.71
-------------------------------------------------------------------------------

Segment Leq : 67.71 dBA

Results segment # 2: 410 NWB (day)
----------------------------------

Source height = 1.51 m

ROAD (0.00 + 66.26 + 0.00) = 66.26 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.57  78.80   0.00 -11.24  -1.30   0.00   0.00   0.00  66.26
-------------------------------------------------------------------------------


Segment Leq : 66.26 dBA

Results segment # 3: Kennedy (day)
----------------------------------

Source height = 1.27 m


ROAD (0.00 + 61.60 + 0.00) = 61.60 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     90   0.58  70.20   0.00  -4.27  -4.33   0.00   0.00   0.00  61.60
-------------------------------------------------------------------------------

Segment Leq : 61.60 dBA

Total Leq All Segments: 70.63 dBA
```

```
Results segment # 1: 410 SEB (night)
-----------------------------------

Source height = 1.51 m

ROAD (0.00 + 67.71 + 0.00) = 67.71 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.57  78.80   0.00  -9.78  -1.30   0.00   0.00   0.00  67.71
-------------------------------------------------------------------------------

Segment Leq : 67.71 dBA

Results segment # 2: 410 NWB (night)
-----------------------------------

Source height = 1.51 m

ROAD (0.00 + 66.26 + 0.00) = 66.26 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.57  78.80   0.00 -11.24  -1.30   0.00   0.00   0.00  66.26
-------------------------------------------------------------------------------

Segment Leq : 66.26 dBA

Results segment # 3: Kennedy (night)
-----------------------------------

Source height = 1.27 m

ROAD (0.00 + 55.06 + 0.00) = 55.06 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     90   0.58  63.66   0.00  -4.27  -4.33   0.00   0.00   0.00  55.06
-------------------------------------------------------------------------------

Segment Leq : 55.06 dBA

Total Leq All Segments: 70.19 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 70.63
                           (NIGHT): 70.19
```