

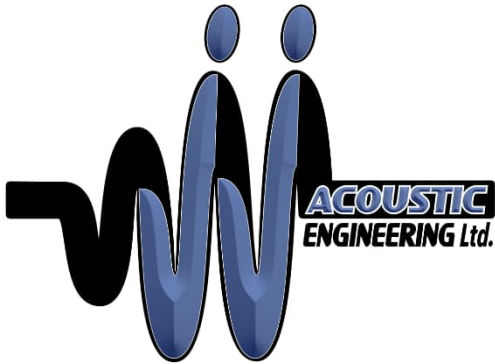


Road Traffic and Stationary Noise Impact Study

785 Gordon Street, Guelph, Ontario

JJ-00239-NIS1





March 21, 2022

Reference No. JJ-00239-NIS1

Caitlin Aitchison
srm Architects Inc.
279 King Street West, Suite 200
Kitchener, Ontario N2G 1B1

Dear Ms. Aitchison:

**Re: Feasibility Road Traffic and Stationary Noise Impact Study
785 Gordon Street, Guelph, Ontario**

1. Introduction

JJ Acoustic Engineering Ltd. (JJAE) was retained to complete a Feasibility Road Traffic and Stationary Noise Impact Study (Study) for the residential development located at 785 Gordon Street in Guelph, Ontario (Site). The Site will be developed into a 10-storey residential building. JJAE has provided a copy of the most up-to-date Site Plan in Attachment A.

The Study was prepared consistent with Ontario Ministry of the Environment, Conservation and Parks (MOECP) NPC 300, "Environmental Noise Guideline, Stationary and Transportation Sources— Approval and Planning", August 2013 as well as the Guelph Noise Control Guidelines (GNCG).

This Study has determined that the potential environmental noise impact from road traffic noise is significant. The stationary noise impacts from the neighboring buildings to the Site were below MOECP and GNCG guidelines. The proposed development will require a requirement for central air-conditioning, noise warning clauses and special building components. Road traffic noise control requirements for the Site were determined based on road traffic volumes provided by the City of Guelph (City) forecasted to 2031.

JJ Acoustic Engineering Ltd.
joey@jjae.ca
226-346-6473

The following attachments were included with this Study:

- Attachment A – Site Plan
- Attachment B – Traffic Data, Traffic Data Summary Table, STC Calculations and Sample Stamson Traffic Model Outputs
- Attachment C – Stationary Noise Impact Figures
- Attachment D – Stationary Noise Impact Source Table

2. Road Traffic Analysis

2.1 Road Traffic Noise Modeling Methodology

The road traffic noise impact was conducted using STAMSON, the MOECP's computerized model of ORNAMENT. The Application of the model for the site was consistent with the ORNAMENT technical documents. The computer model input parameters include, among other data, the number of road segments, number of house rows, the positional relationship of the receptor to a noise source or barrier in terms of distance, elevation and angle of exposure to the source, the basic site topography, the ground surface type, traffic volumes, traffic composition and speed limit.

The predicted sound level is based on the 1-hour equivalent sound level, designated as Leq, and is adjusted by the STAMSON program to the 16-hour daytime and the 8-hour nighttime equivalent sound level. The applicable noise criteria for noise sensitive spaces are specified in terms of the 16-hour daytime period (7:00 a.m. to 11:00 p.m.) and 8-hour nighttime period (11:00 p.m. to 7:00 a.m.) enabling a direct comparison between the STAMSON model output and the noise limits.

2.2 Road Traffic Model Input Parameters

This section describes the STAMSON model input parameters used to predict road traffic noise impact for the Site.

The Site has two significant roadways in the vicinity of the development: Gordon Street approximately 15 meters to the East and Harvard Road approximately 15 meters to the North. Where there are intervening and off-site structures that provide line-of-sight obstruction to the roads, JJAЕ did not include line-of-sight obstruction in our analysis as to calculate worst-case noise impact.

2.2.1 Road Traffic Parameters

The traffic data provided by the City has been summarized below:

Gordon Street:

- Current AADT (2019) (Calculated): ((¹AM Peak) + (¹PM Peak)) x 5 = 20,585
- Forecast AADT (2031) (Calculated)²: 27,684
- Commercial Vehicle Rates (Assumed 5.18% Total³): 3.11% medium trucks and 2.08% heavy trucks
- Posted Speed Limit: 60 km/h
- Day Night Splits: 90% day and 10% night based on common practice in acoustic engineering

Harvard Road:

- Current AADT (2019) (Calculated): ((¹AM Peak) + (¹PM Peak)) x 5 = 2420
- Future AADT (2031) (Calculated)²: 3069
- Commercial Vehicle Rates (Assumed 3.11% Total³): 1.87% medium trucks and 1.24% heavy trucks
- Posted Speed Limit: 50 km/h
- Day Night Splits: 90% day and 10% night based on common practice in acoustic engineering

JJAE was provided with traffic data for 2019 from the City to use in our calculations. JJAE used a very conservative 2.5% growth increase over 12 years which would exceed most municipalities growth potential for roadways similar to Gordon Street. Therefore, JJAE believes that this data is suitable and acceptable in terms of calculating future potential noise impacts.

The traffic data is the foundation of this analysis and the Study will be updated if the values change. Traffic data was supplied by the City. The City's AADT report for this Noise Studies report has been supplied in Attachment B.

¹ No AADT data was supplied but AM and PM Peak values were supplied. JJAE has used a very conservative calculations method which takes the sum of the AM Peak and PM Peak values for the roadway and multiplies that by 5. This approach is used by traffic engineers as a conservative calculation of the AADT for a roadway and is the calculation method used in this report.

² Future AADT was calculated using a 2.5% increase over 12 years to estimate the 2031 Future Traffic Volume.

³ Percentages of Commercial Vehicles Rate was calculated using the worst-case truck traffic volumes for both the AM and PM peak and dividing by the total traffic to calculate the 5.18% total for Gordon Street and 3.11% total for Harvard Road. JJAE used a conservative 60% medium truck to 40% heavy truck ratio to calculate the 3.11% medium truck and 2.08% heavy truck volumes for Gordon Street and 1.87% medium truck and 1.24% heavy truck volumes for Harvester Road.

2.3 Road Traffic Noise Modeling Results

JJAE calculated the Plane of Window (POW) noise exposure for each floor at the Site for the separate daytime and nighttime periods.

The STAMSON road traffic model outputs are provided in Attachment B.

2.4 Road Traffic Modeling Discussion

Noise control requirements will be defined based on NPC 300.

Daytime Outdoor Living Area Assessment (NPC 300, Section C7.1.1)

NPC 300 section A5 (pages 13-14) defines an Outdoor Living Area (OLA). As part of this definition, a balcony or terrace is considered an OLA if it has a minimum depth of 4 meters. All balconies are less than 4 m in depth and therefore will not be considered as OLAs. This can also be seen in the definitions section of the GNCG.

JJAE has identified several potential OLA locations. OLA locations are indicated on Attachment A.

Plane of a Window – Ventilation Requirements (NPC 300, Section C7.1.2)

The predicted daytime and nighttime Plane of Window (POW) noise impact assumes a worst-case and direct line of sight noise exposure to both roads, unless the building itself blocks line-of-sight (full or partial).

JJAE has used the following criteria, which is a summary of NPC 300 requirements, to evaluate the Site noise impacts from road traffic noise:

Daytime Level (dBA)	Nighttime Level (dBA)	Ventilation Requirements and Warning Clauses	Special Building Components
55	50	Not Required	Not Required
55 – 65	50 – 60	Yes, with Type C Warning Clause	Not Required
66 or more	60 or more	Yes, with Type D Warning Clause	Yes

Table B.1 summarizes the predicted worst-case sound levels and the requirements for the units. The following warning clause is required:

"The Transferee of 785 Gordon Street, for himself, his heirs, executors, administrators, successors and assigns acknowledge being advised that despite the inclusion of noise control features in the development and/or within the building unit sound levels due to increasing road traffic may occasionally interfere with some indoor and/or outdoor activities of each dwelling occupants as the sound levels may at times exceed the sound level limits of the municipal and provincial noise criteria."

"This development includes a number of measures to help reduce noise impacts, listed below. To ensure the provincial and municipal sound level limits are not exceeded and/or to keep sound levels as low as possible it is important to maintain the sound attenuation features provided."

““This development includes building and street orientation to help increase setback distances to major noise sources and shield OLA from excessive noise levels.”

"Each 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 municipal and provincial sound level limits."

“The building components of each dwelling unit (walls, windows and exterior doors) have been designed to provide acoustic insulation so that, when windows and exterior doors are closed, the indoor sound levels are within the municipal and provincial sound level limits. The details of this building component design are available by contacting the builder of this unit.”

Indoor Living Areas – Building Components (NPC 300, Section C7.1.3)

At minimum, the building must be constructed to standard Ontario Building Code requirements. JJAЕ has assumed 35% window to floor area coverage and that windows are thick and operable.

3. Stationary Noise Impact Analysis

3.1 Stationary Noise Impact Sound Level Criteria

The general criteria for stationary noise sources are defined by NPC 300. The criteria defined in Table C-5 and C-6, "Exclusion Limit Values of One-Hour Equivalent Sound Level (Leq, dBA) Outdoor Points of Reception" and "Exclusion Limit Values of One-Hour Equivalent Sound Level (Leq, dBA) Plane of Window of Noise Sensitive Spaces" are used to evaluate the noise impact at the proposed development.

The criteria for a Class 1 area have been summarized below:

Receiver Category	Time Period	Stationary Noise Criteria
Outdoor Living Area (OLA)	Day = 7:00 to 23:00	Leq = 50 dBA
Plane of Window (POW)	Day = 7:00 to 23:00	Leq = 50 dBA
	Night = 23:00 to 7:00	Leq = 45 dBA

3.2 Modelling Methodology

The stationary noise impact was evaluated using the CADNA A acoustic modelling software that is based on the ISO 9613-2 standard. The data for all potential stationary noise sources was summarized in Attachment D.

4. Noise Impact Summary – From Site

The noise from the Site to the neighboring buildings could not be accounted for because the site has not undergone mechanical design yet. A detailed report should be completed once a mechanical design is done to account for noise from the Site to the neighboring building.

5. Noise Impact Summary – From Environment to Site

There are several buildings near the site. JJAЕ has identified several potential stationary noise sources including:

- HVAC 2 Fan
- Small HVAC Unit
- Representative MUA
- Representative Chiller

A summary of the noise sources used in our modelling is provided in Attachment D.

JJAЕ modelled the noise impact from all significant noise sources to the Site. The results are summarized in the table below and illustrated on Figure 1.

Facade	Worst Case Daytime Sound Level (dBA)	Daytime Noise Limit (dBA)	Worst Case Nighttime Sound Level (dBA)	Nighttime Noise Limit (dBA)	Limits met
North	48	50	44	45	Yes
East	46	50	43	45	Yes
South	45	50	41	45	Yes
West	48	50	45	45	Yes
OLA #1	25	55			Yes
OLA #2	23	55			Yes
OLA #3	24	55			Yes

From the table above it can be seen that all façades meet noise limits.

6. Recommendations

The road traffic noise impacts were above the NPC 300 and GNCG requirements. JJAЕ requires noise mitigation measures including requirements for air conditioning, noise warning clauses (Stated in Section 2.4) and special building components, which have been summarized in Attachment B under Table B1.

The stationary noise impacts from to the site were evaluated and the sound level predictions were determined to be below the noise limits for all façades.

7. Conclusions

The results of this Study indicate that the potential environmental impact from road traffic sources are significant. Mitigation measures will be required including ventilation requirements, special building components and noise warning clauses for each unit.

Should you have any questions on the above, please do not hesitate to contact us.

Yours truly,

Written by:

Reviewed by:

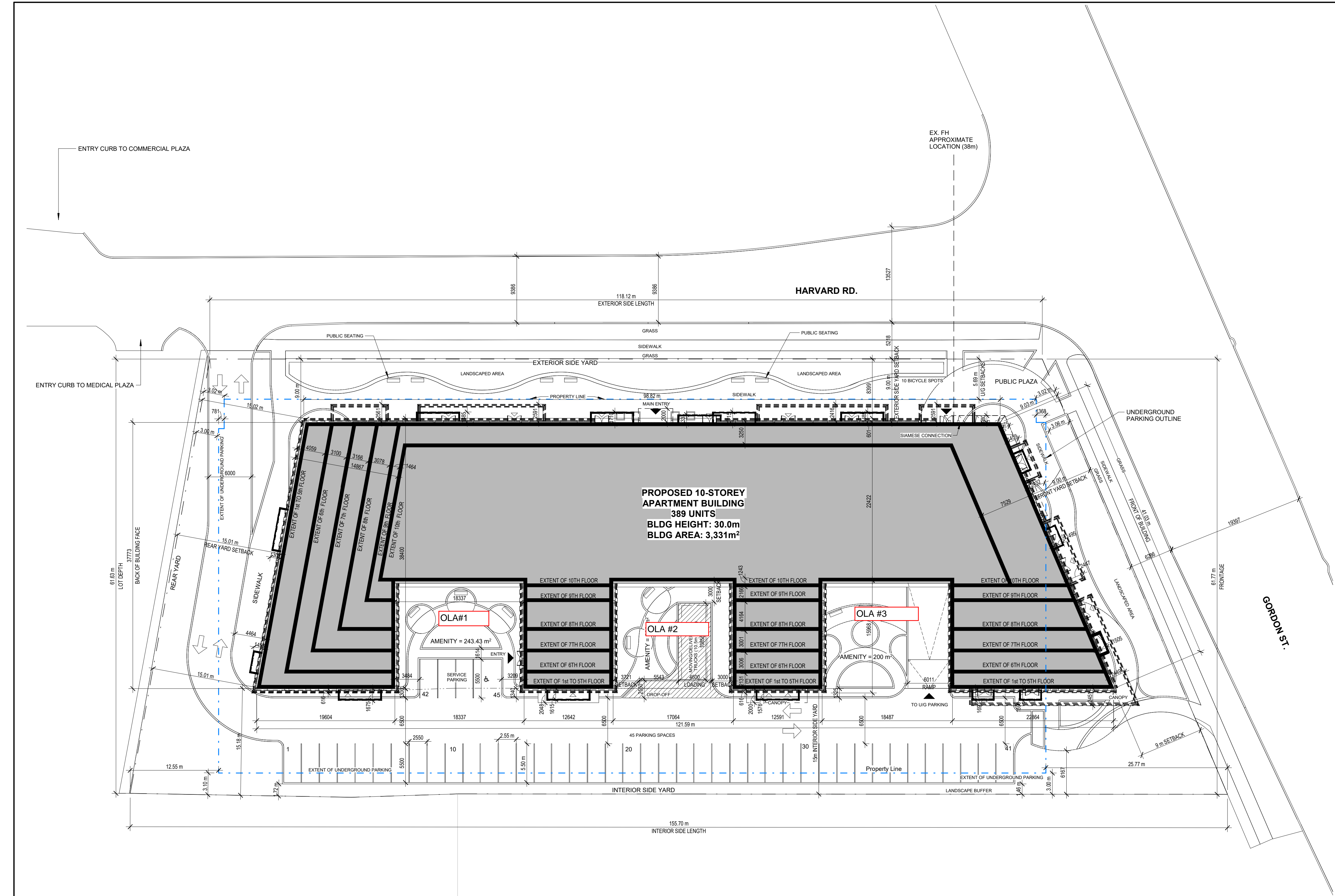
March 21, 2021



Emmanuel Ghiorghis,
Acoustic Technician

Joey Jraige, P.Eng., B.A.Sc.
President

ATTACHMENT A



1 SITE PLAN
1:300

SITE DATA			
785 Gordon Street, Guelph, Ontario			
DATA	REQUIRED	PROVIDED	
ZONING	SC 1-11 w/ requested change to R.4B Special		
MIN LOT AREA (m²)	650m²	8462.2m²	
MIN LOT FRONTAGE (m)	15.0m	61.77m	
SETBACKS	FRONT YARD (meters)	6.0m, except as defined by section 4.24 15.0m	9.0m
	INTERIOR SIDE YARD (m)	1/2 Bldg H, 7.5m min = 15.0m OR 20% of Depth @ midpoint = 27.38m	27.38m
	EXTERIOR SIDE YARD (m)	6.0m	9.0m
	REAR YARD (m)	Greatest of 20% of Lot Depth OR 1/2 Bldg H, 7.5m min = 12.3m or 15.0m	15.0m
	UNDERGROUND PARKING (m)	3.0m	3.0 - 25.77m

BUILDING DATA		
DATA	REQUIRED	PROVIDED
TOTAL BEDS	---	520 beds
TOTAL NO OF UNITS	150up @ 0.85ha = 127.5 units	389 units
BUILDING AREA (m²)	---	3,331m² / 35,845 SF
GROSS FLOOR AREA (m²)	---	28,877.44m² / 310,834.16 SF
FLOOR SPACE INDEX (FSI)	1.5	3.0
NUMBER OF STOREYS	10	10
BUFFER STRIP	Required when abutting another Residential zone	Provided, at Front yard portion of Interior Side Yard
BUILDING HEIGHT (m)	varies, 45° angular plane from street	30.0m, 52° @ Gordon St 30.0m, 46° @ Harvard St
COMMERCIAL/RETAIL AREA (m²)	---	586.46 m² / 6213 SF
GARBAGE, REFUSE STORAGE AND COMPOSTERS	Within main Bldg, or any accessory building; in containers located in a side or rear yard.	In Building, Private pick up
ACCESSORY BUILDING (m²)	70m² in rear yard, setback 0.6m from lot lines, 3.6m height	none provided

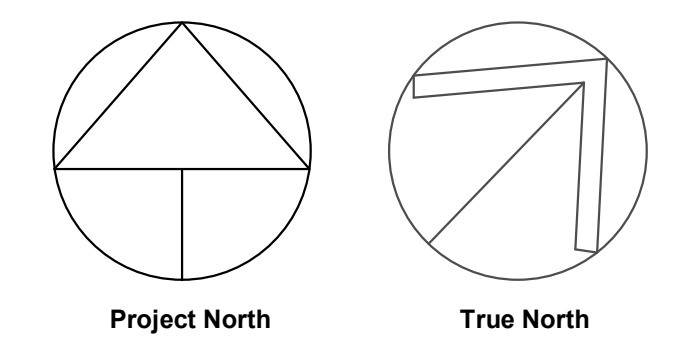
LANDSCAPING DATA		
DATA	REQUIRED	PROVIDED
OUTDOOR LANDSCAPED AREA	40% of lot area = 3,384.9 m²	49% (4,146.1 m²)
LOT AREA	SOFTSCAPE AREA	20% (1,700.5 m²)
	HARDSCAPE AREA	16% (1,361.6 m²)
PUBLIC AREA (*ADD'L LANDSCAPE NOT REQ.)	SOFTSCAPE AREA	9% (763.5 m²)
	HARDSCAPE AREA	4% (332.9 m²)
PAVED AREA & CURBS	---	25% (2104.4 m²)
BUILDING AREA	---	39% (3,331 m²)
TOTAL (LOT AREA)	---	100% (8,462.2 m²)

AMENITY DATA		
DATA	REQUIRED	PROVIDED
BALCONIES	---	443.66 m² / 4,776 SF
TERRACES	---	1,427.31m² / 15,363SF
OUTDOOR LANDSCAPED AREA	---	4,141.70 m² / 44,581 SF
INDOOR AMENITY AREA	---	712.84m² / 7,677 SF
TOTAL AMENITY AREA (m²)	30m²/unit (0-20) *20m²/unit (21+) MIN 50m²/area 389 units = 7,980m²	6,725.51 m² / 71,856 SF

No.	Date	Revision
4	2022-03-18	Issued for OPA/ZBA
3	2022-03-07	Issued for Coordination
2	2022-02-18	Issued for Coordination
1	2021-10-18	Issued for Pre-construction

VEHICLE PARKING DATA		
DATA	REQUIRED	PROVIDED
COMMERCIAL PARKING (1/2 AS OFFICE)	1 / 7.5m² - commercial (@293.23m² = 9) 1 / 33m² - office (@293.23m² = 40) = 49	50
RESIDENTIAL PARKING	1.5 / Unit (0-20), 1.25 / Unit (>20), so 30+470 = 500	0.25/bed @520beds = 130
RESIDENTIAL VISITOR PARKING *On provided. (Included in Count)	20% of total proposed = 26	26
BARRIER FREE PARKING *On provided. (Included in Count)	For 201-300spots = 4	SURFACE - 1 U/G - 6
PROPOSED PARKING SUBTOTAL		179
FLEXIBLE PARKING		40
TOTAL	549	220

BICYCLE PARKING DATA		
DATA	REQUIRED	PROVIDED
RESIDENTIAL BICYCLE PARKING	---	428
SHORT TERM	---	0.1 / unit = 39
LONG TERM	---	1 / unit = 389
COMMERCIAL BICYCLE PARKING	---	4
SHORT TERM	---	0.2 / 100m² GFA or 2 min = 2
LONG TERM	---	0.2/100m² GFA office or 2min = 2
TOTAL SHORT TERM SPOTS	---	41
TOTAL LONG TERM SPOTS	---	391
TOTAL	432	432



- GENERAL NOTES**
- DO NOT SCALE DRAWINGS. WRITTEN DIMENSIONS SHALL HAVE PRECEDENCE OVER SCALED DIMENSIONS.
 - ALL WORK SHALL COMPLY WITH THE 2012 ONTARIO BUILDING CODE AND AMENDMENTS.
 - CONTRACTORS MUST CHECK AND VERIFY ALL DIMENSIONS AND SPECIFICATIONS AND REPORT ANY DISCREPANCIES TO THE ARCHITECT BEFORE PROCEEDING WITH THE WORK.
 - ALL CONTRACTORS AND SUB-CRONTACTORS SHALL HAVE A SET OF APPROVED CONSTRUCTION DOCUMENTS ON SITE AT ALL TIMES.
 - ALL DOCUMENTS REMAIN THE PROPERTY OF THE ARCHITECT. UNAUTHORIZED USE, MODIFICATION, AND/OR REPRODUCTION OF THESE DOCUMENTS IS PROHIBITED WITHOUT WRITTEN PERMISSION. THE CONTRACT DOCUMENTS WERE PREPARED BY THE CONSULTANT FOR THE ACCOUNT OF THE OWNER.
 - THE MATERIAL CONTAINED HEREIN REFLECTS THE CONSULTANT'S BEST JUDGEMENT IN LIGHT OF THE INFORMATION AVAILABLE TO HIM AT THE TIME OF PREPARATION. ANY USE WHICH A THIRD PARTY MAKES OF THE CONTRACT DOCUMENTS, OR ANY RELIANCE ON OR DECISIONS TO BE MADE BASED ON THEM ARE THE RESPONSIBILITY OF SUCH THIRD PARTIES.
 - THE CONSULTANT ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY ANY THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THE CONTRACT DOCUMENTS.

Project No. 21017
 Project Date 2021-11-09
 Drawn by LGJ
 Checked by MYV
 Per Date / Time 2022-03-18 4:18:05 PM



21017
785 GORDON STREET

SITE PLAN

Drawing Scale As indicated
 Status
 REVIEW
 Drawing No. Revision No.
A1.1 - r 4

ATTACHMENT B

Table B1

Road Traffic Noise Levels and Mitigation Measures Summary
785 Gordon Street, Guelph, Ontario

Point of Reception	Road Sound Level Daytime (dBA)	Road Sound Level Nighttime (dBA)	Ventilation Requirements NPC 300	Warning Clauses From NPC 300	Special Building Components
North Façade					
Plane of Window Level 1	64 (dBA)	57 (dBA)	Requirement for Air Conditioning	Type C	Compliance with Ontario Building Code
Plane of Window Level 2	64 (dBA)	57 (dBA)	Requirement for Air Conditioning	Type C	Compliance with Ontario Building Code
Plane of Window Level 3	64 (dBA)	57 (dBA)	Requirement for Air Conditioning	Type C	Compliance with Ontario Building Code
Plane of Window Level 4	64 (dBA)	57 (dBA)	Requirement for Air Conditioning	Type C	Compliance with Ontario Building Code
Plane of Window Level 5	63 (dBA)	57 (dBA)	Requirement for Air Conditioning	Type C	Compliance with Ontario Building Code
Plane of Window Level 6	63 (dBA)	57 (dBA)	Requirement for Air Conditioning	Type C	Compliance with Ontario Building Code
Plane of Window Level 7	63 (dBA)	57 (dBA)	Requirement for Air Conditioning	Type C	Compliance with Ontario Building Code
Plane of Window Level 8	63 (dBA)	56 (dBA)	Requirement for Air Conditioning	Type C	Compliance with Ontario Building Code
Plane of Window Level 9	63 (dBA)	56 (dBA)	Requirement for Air Conditioning	Type C	Compliance with Ontario Building Code
Plane of Window Level 10	63 (dBA)	56 (dBA)	Requirement for Air Conditioning	Type C	Compliance with Ontario Building Code
East Façade					
Plane of Window Level 1	70 (dBA)	64 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating of 31
Plane of Window Level 2	70 (dBA)	63 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating of 31
Plane of Window Level 3	69 (dBA)	63 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating of 30
Plane of Window Level 4	69 (dBA)	63 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating of 30
Plane of Window Level 5	69 (dBA)	62 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating of 30
Plane of Window Level 6	68 (dBA)	62 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating of 29
Plane of Window Level 7	68 (dBA)	61 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating of 29
Plane of Window Level 8	67 (dBA)	61 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating of 28
Plane of Window Level 9	67 (dBA)	60 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating of 28
Plane of Window Level 10	67 (dBA)	60 (dBA)	Requirement for Air Conditioning	Type D	Minimum Window STC Rating of 28

Table B1

Road Traffic Noise Levels and Mitigation Measures Summary
785 Gordon Street, Guelph, Ontario

Point of Reception	Road Sound Level Daytime (dBA)	Road Sound Level Nighttime (dBA)	Ventilation Requirements NPC 300	Warning Clauses From NPC 300	Special Building Components
South Façade					
Plane of Window Level 1	65 (dBA)	58 (dBA)	Requirement for Air Conditioning	Type C	Compliance with Ontario Building Code
Plane of Window Level 2	65 (dBA)	58 (dBA)	Requirement for Air Conditioning	Type C	Compliance with Ontario Building Code
Plane of Window Level 3	65 (dBA)	58 (dBA)	Requirement for Air Conditioning	Type C	Compliance with Ontario Building Code
Plane of Window Level 4	64 (dBA)	58 (dBA)	Requirement for Air Conditioning	Type C	Compliance with Ontario Building Code
Plane of Window Level 5	64 (dBA)	58 (dBA)	Requirement for Air Conditioning	Type C	Compliance with Ontario Building Code
Plane of Window Level 6	64 (dBA)	57 (dBA)	Requirement for Air Conditioning	Type C	Compliance with Ontario Building Code
Plane of Window Level 7	64 (dBA)	57 (dBA)	Requirement for Air Conditioning	Type C	Compliance with Ontario Building Code
Plane of Window Level 8	63 (dBA)	57 (dBA)	Requirement for Air Conditioning	Type C	Compliance with Ontario Building Code
Plane of Window Level 9	63 (dBA)	57 (dBA)	Requirement for Air Conditioning	Type C	Compliance with Ontario Building Code
Plane of Window Level 10	63 (dBA)	56 (dBA)	Requirement for Air Conditioning	Type C	Compliance with Ontario Building Code
West Façade					
Plane of Window Level 1	55 (dBA)	48 (dBA)	Not Required	Not Required	Compliance with Ontario Building Code
Plane of Window Level 2	55 (dBA)	48 (dBA)	Not Required	Not Required	Compliance with Ontario Building Code
Plane of Window Level 3	54 (dBA)	48 (dBA)	Not Required	Not Required	Compliance with Ontario Building Code
Plane of Window Level 4	54 (dBA)	47 (dBA)	Not Required	Not Required	Compliance with Ontario Building Code
Plane of Window Level 5	53 (dBA)	47 (dBA)	Not Required	Not Required	Compliance with Ontario Building Code
Plane of Window Level 6	53 (dBA)	46 (dBA)	Not Required	Not Required	Compliance with Ontario Building Code
Plane of Window Level 7	53 (dBA)	46 (dBA)	Not Required	Not Required	Compliance with Ontario Building Code
Plane of Window Level 8	52 (dBA)	46 (dBA)	Not Required	Not Required	Compliance with Ontario Building Code
Plane of Window Level 9	52 (dBA)	45 (dBA)	Not Required	Not Required	Compliance with Ontario Building Code
Plane of Window Level 10	51 (dBA)	45 (dBA)	Not Required	Not Required	Compliance with Ontario Building Code
Outdoor Living Area (1)					
OLA #1	47 (dBA)	N/A	N/A	N/A	N/A
OLA #2	48 (dBA)	N/A	N/A	N/A	N/A
OLA #3	51 (dBA)	N/A	N/A	N/A	N/A

Note:1

All OLA locations are shielded by the building. JJAЕ has assumed a conservative 10 dBA reduction in sound level from our stamson model for road traffic.

Outdoor Sound Level	65	Day/Night	Day
Indoor Sound Level	45	Road/Rail	Road
Noise Reduction	23		
Angle of Sound	60 to 90 Degrees	Angle Correction	3
		Sum	26

Component	Window	Sum	26
Sound Energy Transmitted	100%	Table 3	0
Component Area	35 % Floor Area		
Room Floor Area	100 31		
Room Absorption Category	Intermediate	Table 4	-4
Noise Spectrum Type	Mixed Road Traffic, Distance Aircraft		
Component Category	Openable Thick Window	Table 5	4
	REQUIRED STC FOR COMPONENT		26


Component	Exterior Wall	Sum	26
Sound Energy Transmitted	10%	Table 3	10
Component Area	65 % Floor Area		
Room Floor Area	100 63		
Room Absorption Category	Intermediate	Table 4	-1
Noise Spectrum Type	Mixed Road Traffic, Distance Aircraft		
Component Category	Exterior Wall	Table 5	7
	REQUIRED STC FOR COMPONENT		42

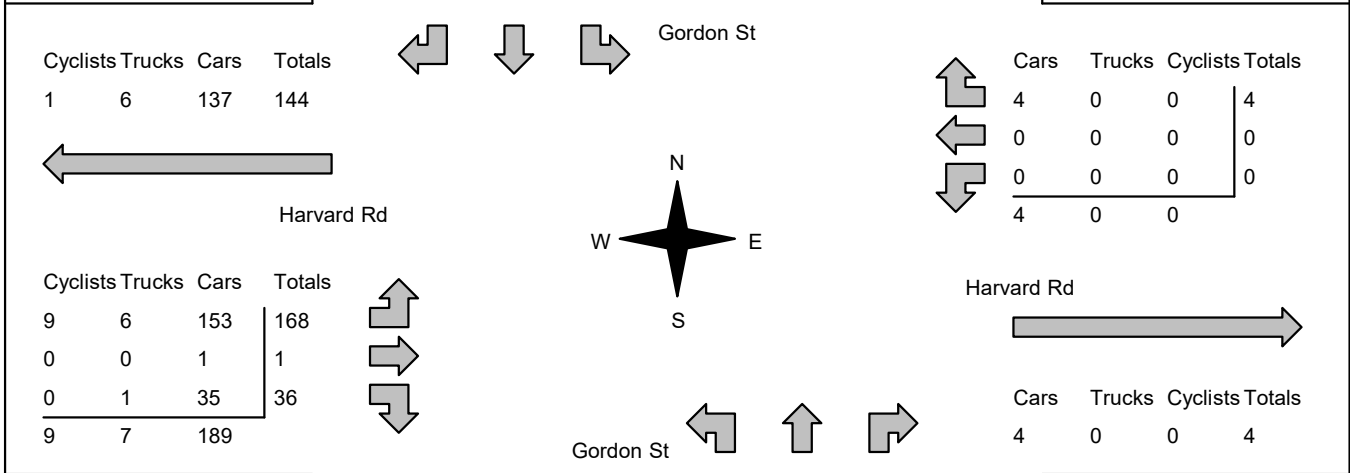
Accu-Traffic Inc.


Morning Peak Diagram	Specified Period From: 7:00:00 To: 9:00:00	One Hour Peak From: 8:00:00 To: 9:00:00
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Municipality: Guelph Site #: 1906000021 Intersection: Gordon St & Harvard Rd TFR File #: 1 Count date: 22-Oct-19	Weather conditions: Rainy Person counted: EvgeniiP Person prepared: Person checked:
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** Signalized Intersection **	Major Road: Gordon St runs N/S
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North Leg Total: 1699 North Entering: 611 North Peds: 11 Peds Cross: ☒	<table style="border-collapse: collapse;"> <tr><td>Cyclists</td><td>1</td><td>3</td><td>0</td><td>4</td></tr> <tr><td>Trucks</td><td>6</td><td>32</td><td>0</td><td>38</td></tr> <tr><td>Cars</td><td>105</td><td>462</td><td>2</td><td>569</td></tr> <tr><td>Totals</td><td>112</td><td>497</td><td>2</td><td></td></tr> </table>	Cyclists	1	3	0	4	Trucks	6	32	0	38	Cars	105	462	2	569	Totals	112	497	2			<table style="border-collapse: collapse;"> <tr><td>Cyclists</td><td>18</td></tr> <tr><td>Trucks</td><td>51</td></tr> <tr><td>Cars</td><td>1019</td></tr> <tr><td>Totals</td><td>1088</td></tr> </table>	Cyclists	18	Trucks	51	Cars	1019	Totals	1088	East Leg Total: 8 East Entering: 4 East Peds: 26 Peds Cross: ☒
Cyclists	1	3	0	4																												
Trucks	6	32	0	38																												
Cars	105	462	2	569																												
Totals	112	497	2																													
Cyclists	18																															
Trucks	51																															
Cars	1019																															
Totals	1088																															



Peds Cross: ☒ West Peds: 34 West Entering: 205 West Leg Total: 349	<table style="border-collapse: collapse;"> <tr><td>Cars</td><td>497</td></tr> <tr><td>Trucks</td><td>33</td></tr> <tr><td>Cyclists</td><td>3</td></tr> <tr><td>Totals</td><td>533</td></tr> </table>	Cars	497	Trucks	33	Cyclists	3	Totals	533		<table style="border-collapse: collapse;"> <tr><td>Cars</td><td>32</td><td>862</td><td>1</td><td>895</td></tr> <tr><td>Trucks</td><td>0</td><td>45</td><td>0</td><td>45</td></tr> <tr><td>Cyclists</td><td>0</td><td>9</td><td>0</td><td>9</td></tr> <tr><td>Totals</td><td>32</td><td>916</td><td>1</td><td></td></tr> </table>	Cars	32	862	1	895	Trucks	0	45	0	45	Cyclists	0	9	0	9	Totals	32	916	1		Peds Cross: ☒ South Peds: 6 South Entering: 949 South Leg Total: 1482
Cars	497																															
Trucks	33																															
Cyclists	3																															
Totals	533																															
Cars	32	862	1	895																												
Trucks	0	45	0	45																												
Cyclists	0	9	0	9																												
Totals	32	916	1																													


Comments

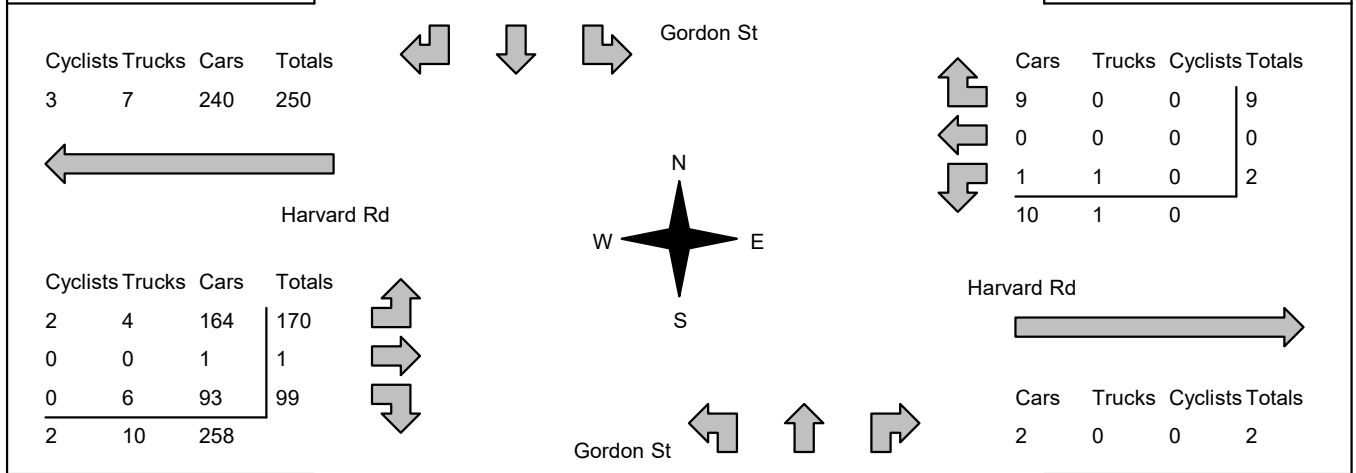
Accu-Traffic Inc.


Mid-day Peak Diagram	Specified Period From: 11:00:00 To: 14:00:00	One Hour Peak From: 12:30:00 To: 13:30:00
-----------------------------	---	--

Municipality: Guelph Site #: 1906000021 Intersection: Gordon St & Harvard Rd TFR File #: 1 Count date: 22-Oct-19	Weather conditions: Rainy Person counted: EvgeniiP Person prepared: Person checked:
---	---

** Signalized Intersection **	Major Road: Gordon St runs N/S
--------------------------------------	---------------------------------------

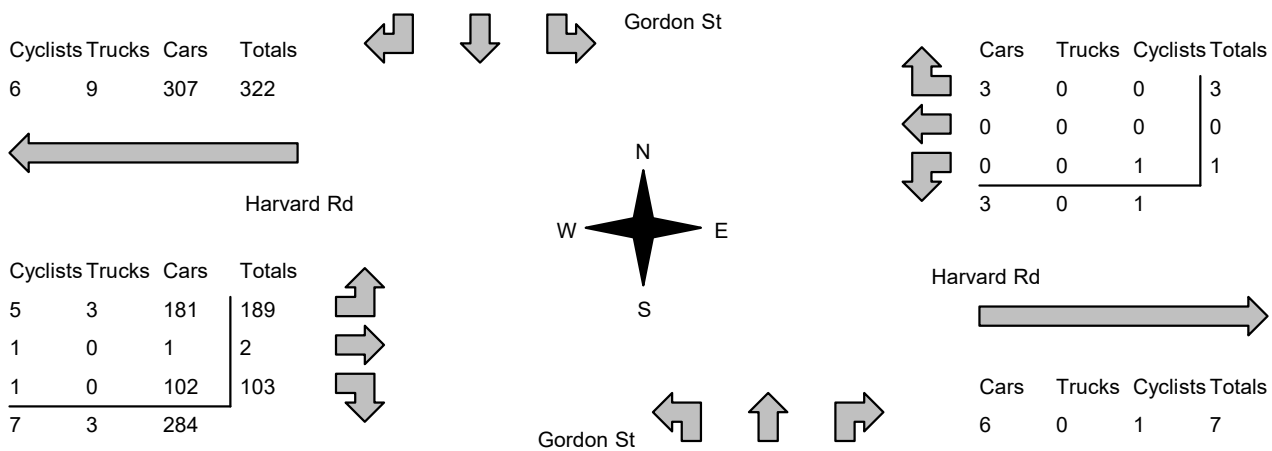
North Leg Total: 1950 North Entering: 969 North Peds: 26 Peds Cross: \bowtie	<table style="border-collapse: collapse;"> <tr><td>Cyclists</td><td>3</td><td>3</td><td>0</td><td style="border-left: 1px solid black;">6</td></tr> <tr><td>Trucks</td><td>6</td><td>36</td><td>0</td><td style="border-left: 1px solid black;">42</td></tr> <tr><td>Cars</td><td>160</td><td>760</td><td>1</td><td style="border-left: 1px solid black;">921</td></tr> <tr><td>Totals</td><td>169</td><td>799</td><td>1</td><td style="border-left: 1px solid black;"></td></tr> </table>	Cyclists	3	3	0	6	Trucks	6	36	0	42	Cars	160	760	1	921	Totals	169	799	1			<table style="border-collapse: collapse;"> <tr><td>Cyclists</td><td>5</td></tr> <tr><td>Trucks</td><td>45</td></tr> <tr><td>Cars</td><td>931</td></tr> <tr><td>Totals</td><td>981</td></tr> </table>	Cyclists	5	Trucks	45	Cars	931	Totals	981	East Leg Total: 13 East Entering: 11 East Peds: 17 Peds Cross: \bowtie
Cyclists	3	3	0	6																												
Trucks	6	36	0	42																												
Cars	160	760	1	921																												
Totals	169	799	1																													
Cyclists	5																															
Trucks	45																															
Cars	931																															
Totals	981																															



Peds Cross: \bowtie West Peds: 45 West Entering: 270 West Leg Total: 520	<table style="border-collapse: collapse;"> <tr><td>Cars</td><td>854</td></tr> <tr><td>Trucks</td><td>43</td></tr> <tr><td>Cyclists</td><td>3</td></tr> <tr><td>Totals</td><td>900</td></tr> </table>	Cars	854	Trucks	43	Cyclists	3	Totals	900		<table style="border-collapse: collapse;"> <tr><td>Cars</td><td>80</td><td>758</td><td>0</td><td style="border-left: 1px solid black;">838</td></tr> <tr><td>Trucks</td><td>1</td><td>41</td><td>0</td><td style="border-left: 1px solid black;">42</td></tr> <tr><td>Cyclists</td><td>0</td><td>3</td><td>0</td><td style="border-left: 1px solid black;">3</td></tr> <tr><td>Totals</td><td>81</td><td>802</td><td>0</td><td style="border-left: 1px solid black;"></td></tr> </table>	Cars	80	758	0	838	Trucks	1	41	0	42	Cyclists	0	3	0	3	Totals	81	802	0		Peds Cross: \bowtie South Peds: 7 South Entering: 883 South Leg Total: 1783
Cars	854																															
Trucks	43																															
Cyclists	3																															
Totals	900																															
Cars	80	758	0	838																												
Trucks	1	41	0	42																												
Cyclists	0	3	0	3																												
Totals	81	802	0																													

Comments

Accu-Traffic Inc.

Afternoon Peak Diagram		Specified Period From: 15:00:00 To: 18:00:00	One Hour Peak From: 16:45:00 To: 17:45:00																												
Municipality: Guelph Site #: 1906000021 Intersection: Gordon St & Harvard Rd TFR File #: 1 Count date: 22-Oct-19		Weather conditions: Rainy Person counted: EvgeniiP Person prepared: Person checked:																													
** Signalized Intersection **		Major Road: Gordon St runs N/S																													
North Leg Total: 2627 North Entering: 1482 North Peds: 40 Peds Cross: \bowtie	<table style="width: 100%; border-collapse: collapse;"> <tr><td>Cyclists</td><td>5</td><td>11</td><td>0</td><td style="border-left: 1px solid black;">16</td></tr> <tr><td>Trucks</td><td>6</td><td>31</td><td>0</td><td style="border-left: 1px solid black;">37</td></tr> <tr><td>Cars</td><td>221</td><td>1205</td><td>3</td><td style="border-left: 1px solid black;">1429</td></tr> <tr><td>Totals</td><td>232</td><td>1247</td><td>3</td><td style="border-left: 1px solid black;"></td></tr> </table>	Cyclists	5	11	0	16	Trucks	6	31	0	37	Cars	221	1205	3	1429	Totals	232	1247	3		<table style="width: 100%; border-collapse: collapse;"> <tr><td>Cyclists</td><td>8</td></tr> <tr><td>Trucks</td><td>37</td></tr> <tr><td>Cars</td><td>1100</td></tr> <tr><td>Totals</td><td>1145</td></tr> </table>	Cyclists	8	Trucks	37	Cars	1100	Totals	1145	East Leg Total: 11 East Entering: 4 East Peds: 24 Peds Cross: \bowtie
Cyclists	5	11	0	16																											
Trucks	6	31	0	37																											
Cars	221	1205	3	1429																											
Totals	232	1247	3																												
Cyclists	8																														
Trucks	37																														
Cars	1100																														
Totals	1145																														
 <p style="text-align: center;">Gordon St</p> <p style="text-align: center;">Harvard Rd</p> <p style="text-align: center;">Gordon St</p> <p style="text-align: center;">Harvard Rd</p>																															
Peds Cross: \bowtie West Peds: 64 West Entering: 294 West Leg Total: 616	<table style="width: 100%; border-collapse: collapse;"> <tr><td>Cars</td><td>1307</td></tr> <tr><td>Trucks</td><td>31</td></tr> <tr><td>Cyclists</td><td>13</td></tr> <tr><td>Totals</td><td>1351</td></tr> </table>	Cars	1307	Trucks	31	Cyclists	13	Totals	1351	<table style="width: 100%; border-collapse: collapse;"> <tr><td>Cars</td><td>86</td><td>916</td><td>2</td><td style="border-left: 1px solid black;">1004</td></tr> <tr><td>Trucks</td><td>3</td><td>34</td><td>0</td><td style="border-left: 1px solid black;">37</td></tr> <tr><td>Cyclists</td><td>1</td><td>3</td><td>0</td><td style="border-left: 1px solid black;">4</td></tr> <tr><td>Totals</td><td>90</td><td>953</td><td>2</td><td style="border-left: 1px solid black;"></td></tr> </table>	Cars	86	916	2	1004	Trucks	3	34	0	37	Cyclists	1	3	0	4	Totals	90	953	2		Peds Cross: \bowtie South Peds: 7 South Entering: 1045 South Leg Total: 2396
Cars	1307																														
Trucks	31																														
Cyclists	13																														
Totals	1351																														
Cars	86	916	2	1004																											
Trucks	3	34	0	37																											
Cyclists	1	3	0	4																											
Totals	90	953	2																												
Comments																															

Accu-Traffic Inc.

Eight Hour Peak Diagram

Eight Hour Peak

From: 8:00:00

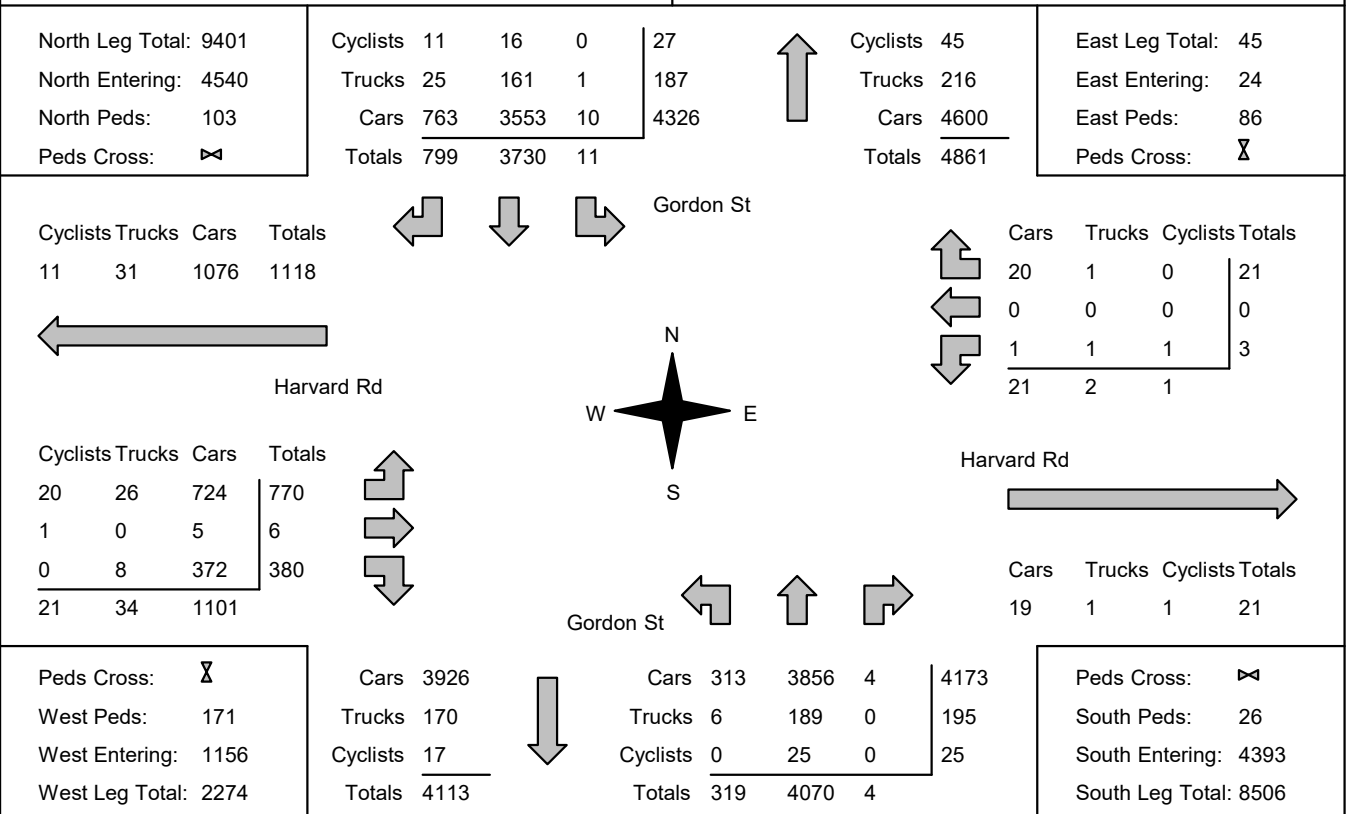
To: 16:00:00

Municipality: Guelph
Site #: 1906000021
Intersection: Gordon St & Harvard Rd
TFR File #: 1
Count date: 22-Oct-19

Weather conditions:
Rainy
Person counted: EvgeniiP
Person prepared:
Person checked:

**** Signalized Intersection ****

Major Road: Gordon St runs N/S



Comments

Accu-Traffic Inc.

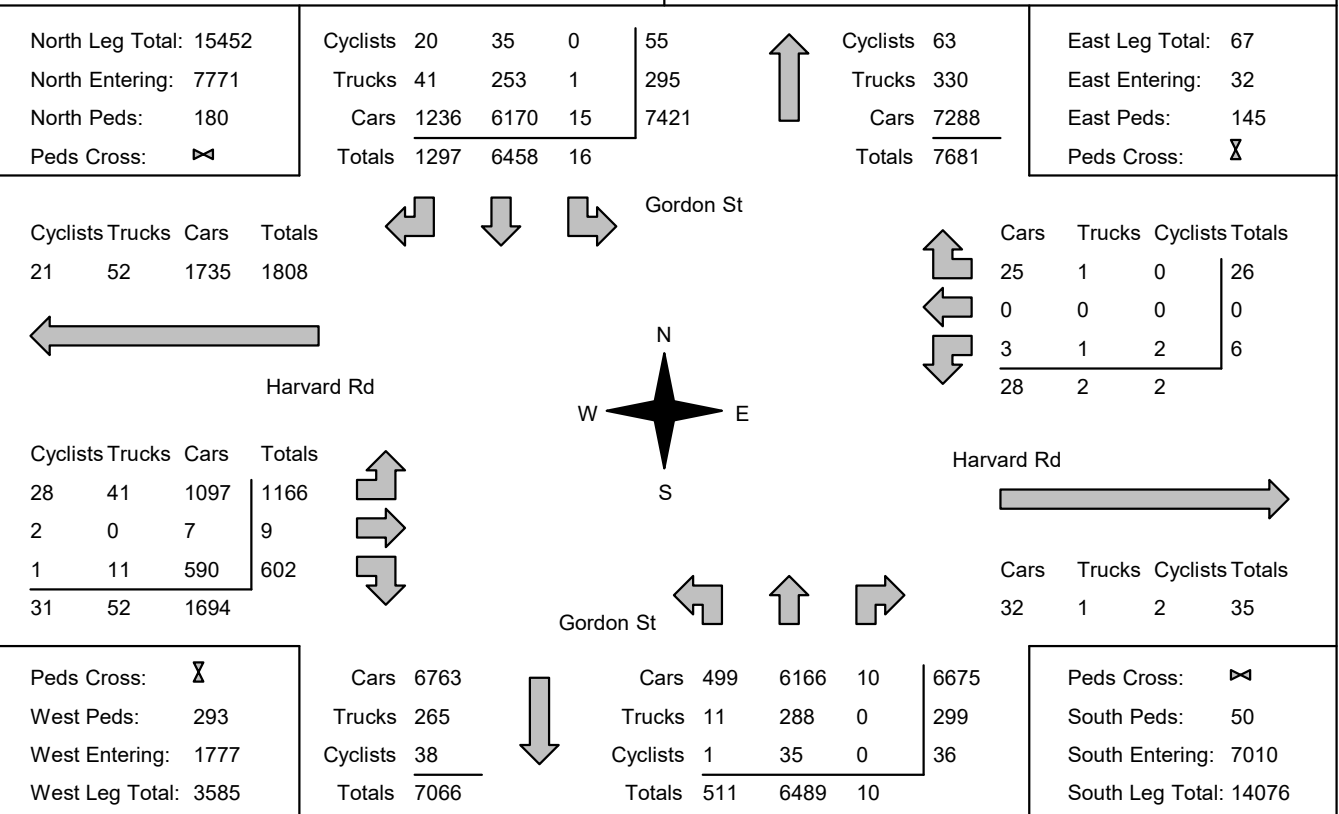
Total Count Diagram

Municipality: Guelph
Site #: 1906000021
Intersection: Gordon St & Harvard Rd
TFR File #: 1
Count date: 22-Oct-19

Weather conditions: Rainy
Person counted: EvgeniiP
Person prepared:
Person checked:

**** Signalized Intersection ****

Major Road: Gordon St runs N/S



Comments



Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

Accu-Traffic Inc.

Traffic Count Summary

Intersection: Gordon St & Harvard Rd Count Date: 22-Oct-19 Municipality: Guelph

North Approach Totals						North/South Total Approaches	South Approach Totals					
Hour Ending	Includes Cars, Trucks, & Cyclists				Total Peds		Hour Ending	Includes Cars, Trucks, & Cyclists				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0
8:00:00	1	357	43	401	5	1035	8:00:00	13	621	0	634	1
9:00:00	2	497	112	611	11	1560	9:00:00	32	916	1	949	6
11:00:00	0	0	0	0	0	0	11:00:00	0	0	0	0	0
12:00:00	2	741	177	920	9	1780	12:00:00	62	797	1	860	2
13:00:00	2	786	174	962	18	1823	13:00:00	77	784	0	861	5
14:00:00	1	729	166	896	34	1666	14:00:00	63	706	1	770	6
15:00:00	0	0	0	0	2	0	15:00:00	0	0	0	0	0
16:00:00	4	977	170	1151	29	2104	16:00:00	85	867	1	953	7
17:00:00	2	1200	239	1441	38	2430	17:00:00	85	898	6	989	13
18:00:00	2	1171	216	1389	34	2383	18:00:00	94	900	0	994	10
Totals:	16	6458	1297	7771	180	14781	S Totals:	511	6489	10	7010	50
East Approach Totals						East/West Total Approaches	West Approach Totals					
Hour Ending	Includes Cars, Trucks, & Cyclists				Total Peds		Hour Ending	Includes Cars, Trucks, & Cyclists				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0
8:00:00	1	0	1	2	6	64	8:00:00	46	0	16	62	15
9:00:00	0	0	4	4	26	209	9:00:00	168	1	36	205	34
11:00:00	0	0	0	0	0	0	11:00:00	0	0	0	0	0
12:00:00	0	0	6	6	6	186	12:00:00	111	2	67	180	37
13:00:00	1	0	4	5	15	239	13:00:00	154	0	80	234	36
14:00:00	2	0	5	7	12	273	14:00:00	164	2	100	266	29
15:00:00	0	0	0	0	0	0	15:00:00	0	0	0	0	0
16:00:00	0	0	2	2	27	273	16:00:00	173	1	97	271	35
17:00:00	1	0	2	3	29	258	17:00:00	161	1	93	255	48
18:00:00	1	0	2	3	24	307	18:00:00	189	2	113	304	59
Totals:	6	0	26	32	145	1809	W Totals:	1166	9	602	1777	293
Calculated Values for Traffic Crossing Major Street												
Hours Ending:	8:00	9:00	12:00	13:00			14:00	16:00	17:00	18:00		
Crossing Values:	53	186	124	178			208	210	214	236		

Filename: northf1.te Time Period: Day/Night 16/8 hours
Description: North Facade Floor 1

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

Car traffic volume : 23623/2625 veh/TimePeriod *
Medium truck volume : 775/86 veh/TimePeriod *
Heavy truck volume : 518/58 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): 20585
Percentage of Annual Growth : 2.50
Number of Years of Growth : 12.00
Medium Truck % of Total Volume : 3.11
Heavy Truck % of Total Volume : 2.08
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Gordon St (day/night)

Angle1 Angle2 : 0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 40.00 / 40.00 m
Receiver height : 2.00 / 2.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↑
Road data, segment # 2: Harvard Rd (day/night)

Car traffic volume : 2838/315 veh/TimePeriod *
Medium truck volume : 55/6 veh/TimePeriod *
Heavy truck volume : 36/4 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 2420
Percentage of Annual Growth : 2.50

Number of Years of Growth : 12.00
 Medium Truck % of Total Volume : 1.87
 Heavy Truck % of Total Volume : 1.24
 Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 2: Harvard Rd (day/night)

 Angle1 Angle2 : -90.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 15.00 / 15.00 m
 Receiver height : 2.00 / 2.00 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

↑
 Results segment # 1: Gordon St (day)

Source height = 1.20 m

ROAD (0.00 + 62.76 + 0.00) = 62.76 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	70.03	0.00	-4.26	-3.01	0.00	0.00	0.00	62.76

Segment Leq : 62.76 dBA

↑
 Results segment # 2: Harvard Rd (day)

Source height = 1.05 m

ROAD (0.00 + 57.77 + 0.00) = 57.77 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	57.77	0.00	0.00	0.00	0.00	0.00	0.00	57.77

Segment Leq : 57.77 dBA

Total Leq All Segments: 63.96 dBA

↑
 Results segment # 1: Gordon St (night)

Source height = 1.20 m

ROAD (0.00 + 56.24 + 0.00) = 56.24 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	63.51	0.00	-4.26	-3.01	0.00	0.00	0.00	56.24

Segment Leq : 56.24 dBA

↑

Results segment # 2: Harvard Rd (night)

Source height = 1.05 m

ROAD (0.00 + 51.22 + 0.00) = 51.22 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	51.22	0.00	0.00	0.00	0.00	0.00	0.00	51.22

Segment Leq : 51.22 dBA

Total Leq All Segments: 57.43 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 63.96
(NIGHT): 57.43

↑

↑

Filename: eastf1.te Time Period: Day/Night 16/8 hours
 Description: East Facade Floor 1

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

```
-----
Car traffic volume : 23623/2625 veh/TimePeriod *
Medium truck volume : 775/86 veh/TimePeriod *
Heavy truck volume : 518/58 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): 20585
Percentage of Annual Growth : 2.50
Number of Years of Growth : 12.00
Medium Truck % of Total Volume : 3.11
Heavy Truck % of Total Volume : 2.08
Day (16 hrs) % of Total Volume : 90.00
```

Data for Segment # 1: Gordon St (day/night)

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 15.00 / 15.00 m
Receiver height : 2.00 / 2.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00
```

↑
 Results segment # 1: Gordon St (day)

Source height = 1.20 m

```
ROAD (0.00 + 70.03 + 0.00) = 70.03 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
-----
-90 90 0.00 70.03 0.00 0.00 0.00 0.00 0.00 0.00 70.03
-----
```

Segment Leq : 70.03 dBA

Total Leq All Segments: 70.03 dBA

↑

Results segment # 1: Gordon St (night)

Source height = 1.20 m

ROAD (0.00 + 63.51 + 0.00) = 63.51 dBA

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

-90	90	0.00	63.51	0.00	0.00	0.00	0.00	0.00	0.00	63.51
-----	----	------	-------	------	------	------	------	------	------	-------

Segment Leq : 63.51 dBA

Total Leq All Segments: 63.51 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 70.03

(NIGHT): 63.51

↑

↑

Filename: southf1.te Time Period: Day/Night 16/8 hours
 Description: South Facade Floor 1

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

```
-----
Car traffic volume : 23623/2625 veh/TimePeriod *
Medium truck volume : 775/86 veh/TimePeriod *
Heavy truck volume : 518/58 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): 20585
Percentage of Annual Growth : 2.50
Number of Years of Growth : 12.00
Medium Truck % of Total Volume : 3.11
Heavy Truck % of Total Volume : 2.08
Day (16 hrs) % of Total Volume : 90.00
```

Data for Segment # 1: Gordon St (day/night)

```
-----
Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 25.00 / 25.00 m
Receiver height : 2.00 / 2.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00
```

↑
 Results segment # 1: Gordon St (day)

Source height = 1.20 m

ROAD (0.00 + 64.80 + 0.00) = 64.80 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	70.03	0.00	-2.22	-3.01	0.00	0.00	0.00	64.80

Segment Leq : 64.80 dBA

Total Leq All Segments: 64.80 dBA

↑

Results segment # 1: Gordon St (night)

Source height = 1.20 m

ROAD (0.00 + 58.28 + 0.00) = 58.28 dBA

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

-90	0	0.00	63.51	0.00	-2.22	-3.01	0.00	0.00	0.00	58.28
-----	---	------	-------	------	-------	-------	------	------	------	-------

Segment Leq : 58.28 dBA

Total Leq All Segments: 58.28 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 64.80

(NIGHT): 58.28

↑

↑

Filename: westf1.te Time Period: Day/Night 16/8 hours
 Description: West Facade Floor 1

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

 Car traffic volume : 2838/315 veh/TimePeriod *
 Medium truck volume : 55/6 veh/TimePeriod *
 Heavy truck volume : 36/4 veh/TimePeriod *
 Posted speed limit : 50 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 2420
 Percentage of Annual Growth : 2.50
 Number of Years of Growth : 12.00
 Medium Truck % of Total Volume : 1.87
 Heavy Truck % of Total Volume : 1.24
 Day (16 hrs) % of Total Volume : 90.00

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

 Angle1 Angle2 : -90.00 deg 0.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 15.00 / 15.00 m
 Receiver height : 2.00 / 2.00 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

↑
 Results segment # 1: Harvard Rd (day)

 Source height = 1.05 m

ROAD (0.00 + 54.76 + 0.00) = 54.76 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	57.77	0.00	0.00	-3.01	0.00	0.00	0.00	54.76

Segment Leq : 54.76 dBA

Total Leq All Segments: 54.76 dBA

↑

Results segment # 1: Harvard Rd (night)

Source height = 1.05 m

ROAD (0.00 + 48.21 + 0.00) = 48.21 dBA

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

-90	0	0.00	51.22	0.00	0.00	-3.01	0.00	0.00	0.00	48.21
-----	---	------	-------	------	------	-------	------	------	------	-------

Segment Leq : 48.21 dBA

Total Leq All Segments: 48.21 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 54.76

(NIGHT): 48.21

↑

↑

Filename: ola1.te Time Period: Day/Night 16/8 hours
 Description: Outdoor Living Area #1

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

 Car traffic volume : 23623/2625 veh/TimePeriod *
 Medium truck volume : 775/86 veh/TimePeriod *
 Heavy truck volume : 518/58 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): 20585
 Percentage of Annual Growth : 2.50
 Number of Years of Growth : 12.00
 Medium Truck % of Total Volume : 3.11
 Heavy Truck % of Total Volume : 2.08
 Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Gordon St (day/night)

 Angle1 Angle2 : -90.00 deg 0.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 165.00 / 165.00 m
 Receiver height : 2.00 / 2.00 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

↑
 Results segment # 1: Gordon St (day)

 Source height = 1.20 m

ROAD (0.00 + 56.61 + 0.00) = 56.61 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	70.03	0.00	-10.41	-3.01	0.00	0.00	0.00	56.61

Segment Leq : 56.61 dBA

Total Leq All Segments: 56.61 dBA

↑

Results segment # 1: Gordon St (night)

Source height = 1.20 m

ROAD (0.00 + 50.09 + 0.00) = 50.09 dBA

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

-90	0	0.00	63.51	0.00	-10.41	-3.01	0.00	0.00	0.00	50.09
-----	---	------	-------	------	--------	-------	------	------	------	-------

Segment Leq : 50.09 dBA

Total Leq All Segments: 50.09 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 56.61

(NIGHT): 50.09

↑

↑

Filename: ola2.te Time Period: Day/Night 16/8 hours
 Description: Outdoor Living Area #2

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

 Car traffic volume : 23623/2625 veh/TimePeriod *
 Medium truck volume : 775/86 veh/TimePeriod *
 Heavy truck volume : 518/58 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): 20585
 Percentage of Annual Growth : 2.50
 Number of Years of Growth : 12.00
 Medium Truck % of Total Volume : 3.11
 Heavy Truck % of Total Volume : 2.08
 Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Gordon St (day/night)

 Angle1 Angle2 : -90.00 deg 0.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 110.00 / 110.00 m
 Receiver height : 2.00 / 2.00 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

↑
 Results segment # 1: Gordon St (day)

 Source height = 1.20 m

ROAD (0.00 + 58.37 + 0.00) = 58.37 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	70.03	0.00	-8.65	-3.01	0.00	0.00	0.00	58.37

Segment Leq : 58.37 dBA

Total Leq All Segments: 58.37 dBA

↑

Results segment # 1: Gordon St (night)

Source height = 1.20 m

ROAD (0.00 + 51.85 + 0.00) = 51.85 dBA

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

-90	0	0.00	63.51	0.00	-8.65	-3.01	0.00	0.00	0.00	51.85
-----	---	------	-------	------	-------	-------	------	------	------	-------

Segment Leq : 51.85 dBA

Total Leq All Segments: 51.85 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 58.37

(NIGHT): 51.85

↑

↑

Filename: ola3.te Time Period: Day/Night 16/8 hours
 Description: Outdoor Living Area #3

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

```
-----
Car traffic volume : 23623/2625 veh/TimePeriod *
Medium truck volume : 775/86 veh/TimePeriod *
Heavy truck volume : 518/58 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): 20585
Percentage of Annual Growth : 2.50
Number of Years of Growth : 12.00
Medium Truck % of Total Volume : 3.11
Heavy Truck % of Total Volume : 2.08
Day (16 hrs) % of Total Volume : 90.00
```

Data for Segment # 1: Gordon St (day/night)

```
-----
Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 55.00 / 55.00 m
Receiver height : 2.00 / 2.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00
```

↑
 Results segment # 1: Gordon St (day)

Source height = 1.20 m

ROAD (0.00 + 61.38 + 0.00) = 61.38 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	70.03	0.00	-5.64	-3.01	0.00	0.00	0.00	61.38

Segment Leq : 61.38 dBA

Total Leq All Segments: 61.38 dBA

↑

Results segment # 1: Gordon St (night)

Source height = 1.20 m

ROAD (0.00 + 54.86 + 0.00) = 54.86 dBA

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

-90	0	0.00	63.51	0.00	-5.64	-3.01	0.00	0.00	0.00	54.86
-----	---	------	-------	------	-------	-------	------	------	------	-------

Segment Leq : 54.86 dBA

Total Leq All Segments: 54.86 dBA

↑

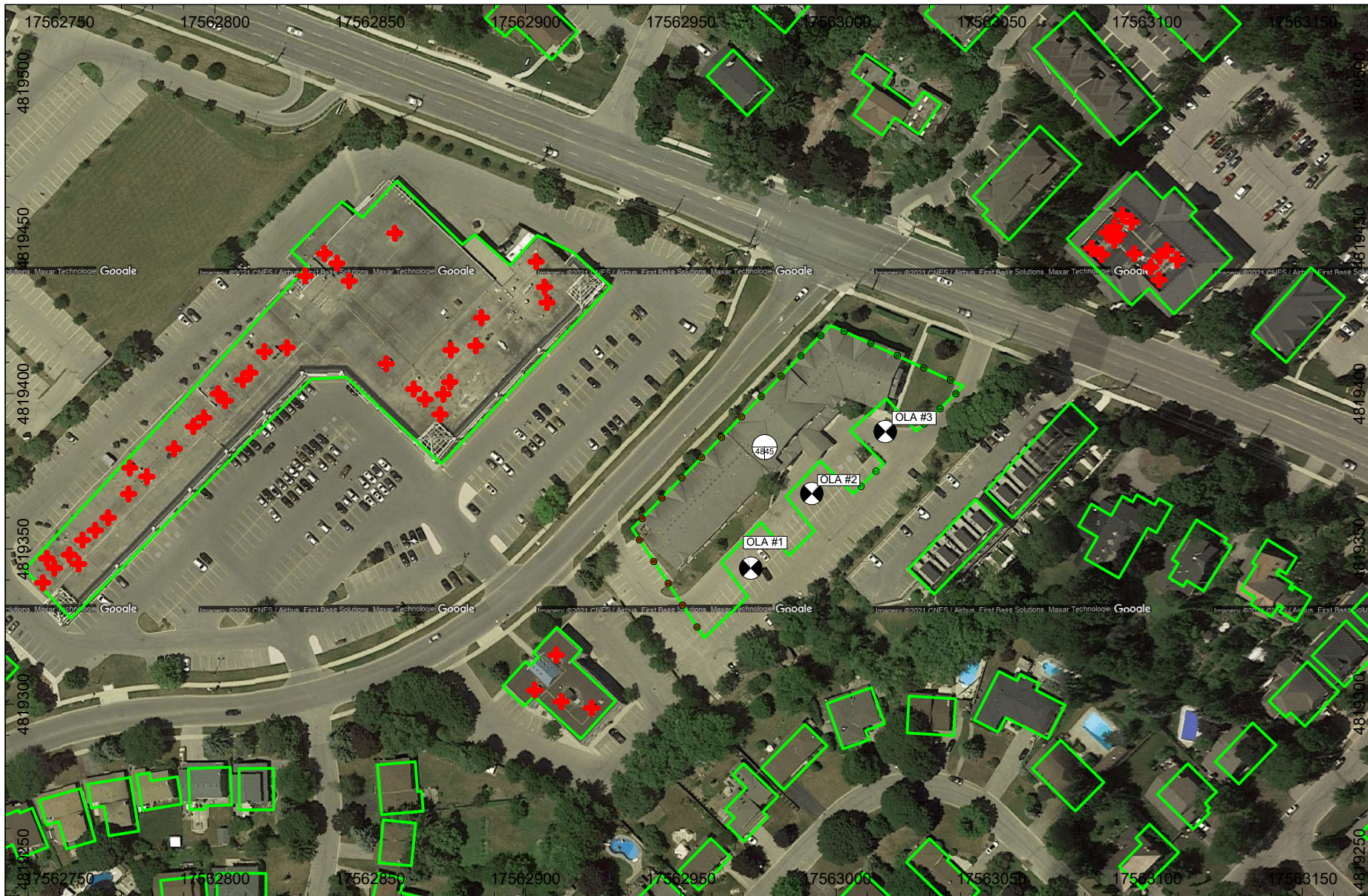
TOTAL Leq FROM ALL SOURCES (DAY): 61.38

(NIGHT): 54.86

↑

↑

ATTACHMENT C



	<ul style="list-style-type: none"> 40.0 45.0 50.0 55.0 60.0 65.0 70.0 75.0 	<ul style="list-style-type: none"> Point Source Building Receiver Building Evaluation 	<p>STATIONARY NOISE IMPACT STUDY 785 GORDON STREET, GUELPH, ONTARIO</p>
<p>Figure 1 - Stationary Noise Impact from Neighboring Buildings to Site</p>			

ATTACHMENT D

Table C1
Stationary Noise Impact Source Data
785 Gordon Street, Guelph, Ontario

Noise Source Description	Cadna ID	Total SWL (dBA)	Data Source or Representative Data	Height Absolute (m)	Above Roof (m)	Coordinates	
						x	y
HVAC_2FAN	HVAC_2FAN	82.8	HVAC_2FAN	7	1.5	17562903	4819442
HVAC_2FAN	HVAC_2FAN	82.8	HVAC_2FAN	7	1.5	17562906	4819434
HVAC_2FAN	HVAC_2FAN	82.8	HVAC_2FAN	7	1.5	17562907	4819429
HVAC_2FAN	HVAC_2FAN	82.8	HVAC_2FAN	7	1.5	17562858	4819452
HVAC_2FAN	HVAC_2FAN	82.8	HVAC_2FAN	7	1.5	17562787	4819382
HVAC_2FAN	HVAC_2FAN	82.8	HVAC_2FAN	7	1.5	17562843	4819436
HVAC_2FAN	HVAC_2FAN	82.8	HVAC_2FAN	11.5	1.5	17563082	4819447
HVAC_2FAN	HVAC_2FAN	82.8	HVAC_2FAN	11.5	1.5	17563092	4819457
HVAC_2FAN	HVAC_2FAN	82.8	HVAC_2FAN	11.5	1.5	17563095	4819455
HVAC_2FAN	HVAC_2FAN	82.8	HVAC_2FAN	11.5	1.5	17563104	4819437
HVAC_2FAN	HVAC_2FAN	82.8	HVAC_2FAN	7	1.5	17562801	4819400
Rep_Chiller	Rep_Chiller	92.8	Rep_Chiller	7.5	2	17562829	4819438
Representative_MUA	Representative_MUA	80.6	Representative_MUA	11.5	1.5	17563087	4819452
Representative_MUA	Representative_MUA	80.6	Representative_MUA	11.25	1.5	17563090	4819454
Representative_MUA	Representative_MUA	80.6	Representative_MUA	6.75	1.5	17562762	4819356
Representative_MUA	Representative_MUA	80.6	Representative_MUA	6.75	1.5	17562855	4819410
Small_HVAC	Small_HVAC	81.9	Small_HVAC	6.75	1.25	17562886	4819424
Small_HVAC	Small_HVAC	81.9	Small_HVAC	6.75	1.25	17562884	4819415
Small_HVAC	Small_HVAC	81.9	Small_HVAC	6.75	1.25	17562876	4819414
Small_HVAC	Small_HVAC	81.9	Small_HVAC	6.75	1.25	17562864	4819401
Small_HVAC	Small_HVAC	81.9	Small_HVAC	6.75	1.25	17562868	4819398
Small_HVAC	Small_HVAC	81.9	Small_HVAC	6.75	1.25	17562873	4819393
Small_HVAC	Small_HVAC	81.9	Small_HVAC	6.75	1.25	17562811	4819407
Small_HVAC	Small_HVAC	81.9	Small_HVAC	6.75	1.25	17562809	4819404
Small_HVAC	Small_HVAC	81.9	Small_HVAC	6.75	1.25	17562816	4819413
Small_HVAC	Small_HVAC	81.9	Small_HVAC	6.75	1.25	17562823	4819415
Small_HVAC	Small_HVAC	81.9	Small_HVAC	6.75	1.25	17562803	4819398
Small_HVAC	Small_HVAC	81.9	Small_HVAC	6.75	1.25	17562796	4819392
Small_HVAC	Small_HVAC	81.9	Small_HVAC	6.75	1.25	17562793	4819389
Small_HVAC	Small_HVAC	81.9	Small_HVAC	6.75	1.25	17562748	4819344
Small_HVAC	Small_HVAC	81.9	Small_HVAC	6.75	1.25	17562746	4819347
Small_HVAC	Small_HVAC	81.9	Small_HVAC	6.75	1.25	17562757	4819353
Small_HVAC	Small_HVAC	81.9	Small_HVAC	6.75	1.25	17562766	4819360
Small_HVAC	Small_HVAC	81.9	Small_HVAC	6.75	1.25	17562753	4819348
Small_HVAC	Small_HVAC	81.9	Small_HVAC	6.75	1.25	17562745	4819339
Small_HVAC	Small_HVAC	81.9	Small_HVAC	6.75	1.25	17562756	4819345
Small_HVAC	Small_HVAC	81.9	Small_HVAC	6.75	1.25	17562773	4819376
Small_HVAC	Small_HVAC	81.9	Small_HVAC	6.75	1.25	17562778	4819373
Small_HVAC	Small_HVAC	81.9	Small_HVAC	6.75	1.25	17562835	4819445
Small_HVAC	Small_HVAC	81.9	Small_HVAC	6.75	1.25	17562839	4819442
Small_HVAC	Small_HVAC	81.9	Small_HVAC	6.75	1.25	17562874	4819400
Small_HVAC	Small_HVAC	81.9	Small_HVAC	6.75	1.25	17562876	4819404
Small_HVAC	Small_HVAC	81.9	Small_HVAC	9.25	1.25	17562910	4819316
Small_HVAC	Small_HVAC	81.9	Small_HVAC	9.25	1.25	17562921	4819299
Small_HVAC	Small_HVAC	81.9	Small_HVAC	9.25	1.25	17562912	4819301
Small_HVAC	Small_HVAC	81.9	Small_HVAC	9.25	1.25	17562903	4819304
Small_HVAC	Small_HVAC	81.9	Small_HVAC	11.25	1.25	17563085	4819445
Small_HVAC	Small_HVAC	81.9	Small_HVAC	11.25	1.25	17563089	4819449
Small_HVAC	Small_HVAC	81.9	Small_HVAC	11.25	1.25	17563091	4819451
Small_HVAC	Small_HVAC	81.9	Small_HVAC	11.25	1.25	17563096	4819445
Small_HVAC	Small_HVAC	81.9	Small_HVAC	11.25	1.25	17563101	4819441
Small_HVAC	Small_HVAC	81.9	Small_HVAC	11.25	1.25	17563104	4819444
Small_HVAC	Small_HVAC	81.9	Small_HVAC	11.25	1.25	17563106	4819446
Small_HVAC	Small_HVAC	81.9	Small_HVAC	11.25	1.25	17563110	4819443
Small_HVAC	Small_HVAC	81.9	Small_HVAC	6.75	1.25	17562772	4819368