nexTrans Consulting
A Division of NextEng Consulting Group Inc.

March 27, 2017

Villalago Residences Inc.
c/o Treasure Hill Homes
1681 Langstaff Road, Unit 1
Vaughan, ON | L4K 5T3

Attention: Mr. Jason Bottoni, MCIP, RPP

Re: Engineering Service – Response to Comments
Proposed Residential Site Plan / Plan of Condominium
Landsbridge Street, Town of Caledon (Bolton)
Our Project No. NT-16-031

NexTrans Consulting (A Division of NextEng Consulting Group Inc.) acknowledges receipt of Town of Caledon comments dated November 2, 2016, with respect to our Transportation Study, dated May 21, 2016. The intention of this letter is to address these comments attached in **Appendix H**.

The subject property is located at the southeast corner of Highway 50 (Queen Street) and Side Road 5 in the Town of Caledon (Bolton) ON. The development plan is to provide 109 condominium townhouse units of which seven (7) freehold units, four (4) semi detached units and one (1) single detached dwelling unit. An overall quantum parking supply of 438 parking spaces are provided to serve the entire development.

Based on the comments and discussion with the Town staff, our responses are addressed in the accompanying revised TIS as follows:

18. a) The Study area and the traffic operation assessment should also include the following intersections:
i) Queen Street South and Queensgate Boulevard
ii) Wood Circle and Landsbridge Street
iii) McCreary Trail and Landsbridge Street
iv) Sheardown Trail and Landsbridge Street
Response: Intersections (a) and (b) noted above are not required based on discussion with Town Staff. The traffic operation assessment includes intersection (c) and (d) and all revised analysis reflect this current condition.

18. b) The consultant used ITE LUC 231 rates, not equations, to estimate the site trips. However, in the report (Page 10), it is mentioned that trips were estimated using equations. This conflict needs to be clarified by the consultant.
Response: The Trip Generation Manual, 9th Edition, published by the ITE for the Low-Rise Residential Condominium/Townhouse (Land Use Code 231) and Single Family Detached Housing (Land Use Code 210) provides equations and rates per land use to estimate site trips. For the purpose of this study, the maximum calculated total trips were based on rates, thus carried forward for conservative analysis. (Addressed in **Section 4.0)**.

18. c) Site trips were assigned to the road network based on a trip distribution pattern developed through the use of TTS 2011 data (Table 4.2). Please provide the methodology and details of the table.
Response: Addressed in **Appendix G**.

18. d) Sightline analysis needs to be conducted, to ensure about the safety of site accesses.
Response: Not required based on discussion with Town Staff.

With the revisions noted, the study concludes that the proposed development can adequately be accommodated by the existing transportation network with minimal traffic impact to the adjacent public roadways. The proposed site access will operate at excellent levels of services.

We trust the enclosed sufficiently addresses your needs. Should you have any questions, please do not hesitate to contact the undersigned.

Yours truly,

NEXTRANS ENGINEERING

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Transportation Analyst

Reviewed by:
Richard Pernicky, CET, MITE
Principal

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APPENDICES

1.0 INTRODUCTION

NexTrans Engineering (A Division of NextEng Consulting Group Inc.) is pleased to present the enclosed Transportation Impact Study in support of a Rezoning/Site Plan and Draft Plan of Condominium application for the above noted property. The subject property is located at the southeast corner of Highway 50 (Queen Street) and Side Road 5 in the Town of Caledon (Bolton) ON, herein referred to as the "subject site". **Figure 1-1** illustrates the subject site location.

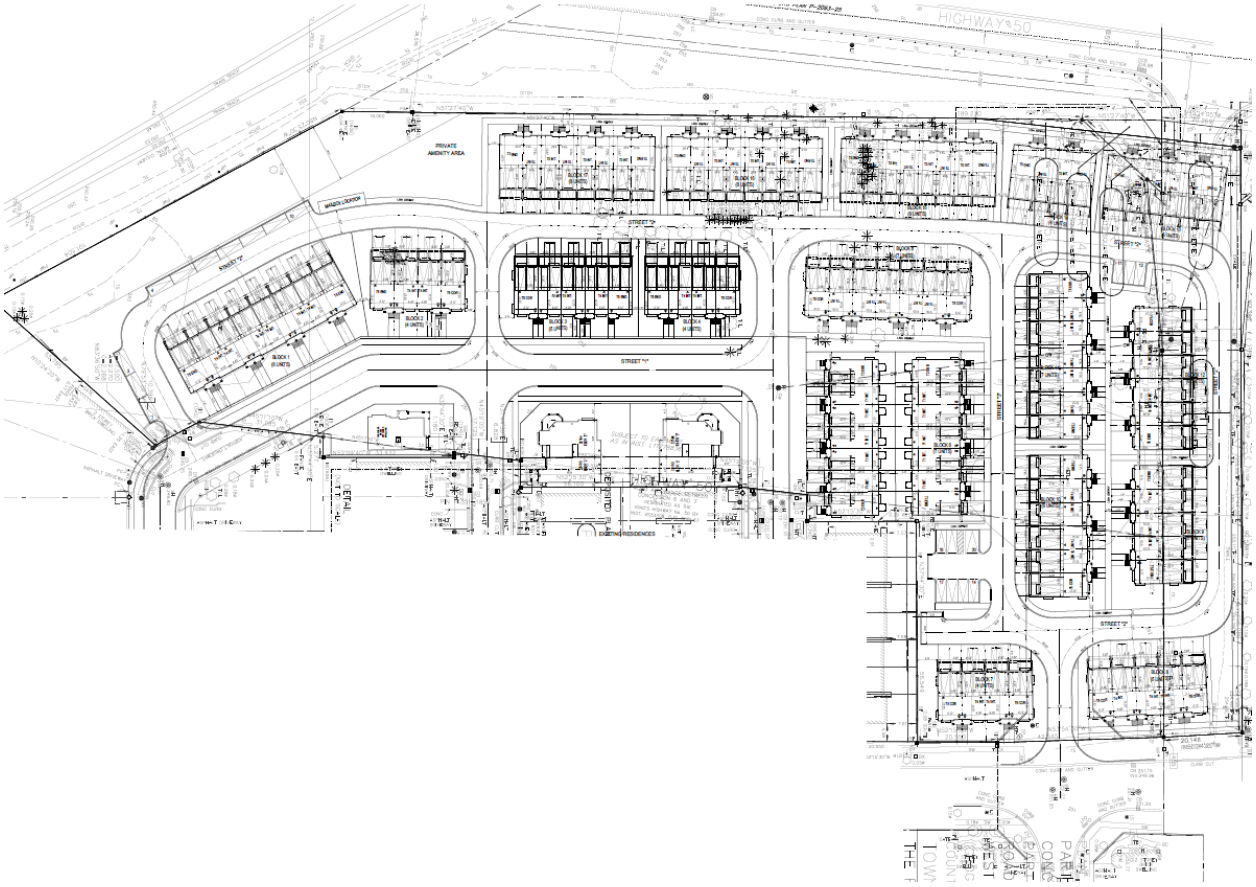
Figure 1-1: Site Location

The subject lands are 2.69 hectares (6.66 acres) in size and generally bounded by commercial development to the north, residential subdivision to the east and Highway 50 (Queen Street) to the west. The development plan is to provide 109 condominium townhouse units of which seven (7) freehold units, four (4) semi detached units and one (1) single detached dwelling unit. At a minimum, two (2) car parking spaces will be provided in a garage and lead in driveway portion for 14 condominium townhouse units, four (4) semi detached units and one (1) single detached unit. The remaining 95 condominium townhouse units will consist of four (4) car parking spaces per unit with two (2) in garage and lead in driveway portion. A total of 20 visitor parking spaces are provided to the 102 non-freehold condominium town house units totaling an overall quantum parking supply of 438 parking spaces to serve the entire development.

A private condominium road with multiple connections to the external public municipal road network will service the condominium blocks. Side Road 5 is an existing Municipal Road that provides access to a single family residence. The intention is to close and stop-up of Side Road 5 and merge the road allowance into the development plan. As such, the proposed development will provide a full movement access from Landsbridge Street via Hanton Crescent, Queensland Crescent and Stella Crescent (i.e. north and south).

Figure 1-2 illustrates the proposed draft plan; **Appendix A** also provides a larger scale version of the proposed draft plan.

Figure 1-2: Draft Plan



Weekday morning and afternoon peak period traffic volume counts was undertaken by Spectrum Traffic Data Inc. at the following study area intersection for traffic assessment purposes:

- Queensgate Blvd / Landsbridge Street, existing signalized
- Landsbridge Street / Hanton Crescent, existing unsignalized
- Landsbridge Street / McCreary Trail, existing unsignalized
- Landsbridge Street / Sheardown Trail, existing unsignalized
- Landsbridge Street / Stella Crescent, existing unsignalized

Weekday peak period Turning Movement Counts were undertaken at the aforementioned study area intersection on Wednesday, March 9, 2016 and Wednesday, December 7, 2016. This data will represent existing baseline traffic conditions for proposed development.

For assessment purposes, a 5-year planning horizon was selected, representing a horizon year of 2021. Future background traffic volumes for the 2021 horizon year consists of two (2) components; background traffic growth applied to through traffic movements within the study area intersections as well as traffic generated by background developments in the vicinity of the subject site.

Future Total Traffic conditions will be determined by the summation of the estimated traffic volumes generated by the site traffic volumes and the background traffic volumes. The study area intersections will be analyzed using SYNCHRO v8.0 software, which utilizes the U.S. Transportation Research Board Highway Capacity Manual 2000 methodology.

2.0 EXISTING TRAFFIC CONDITIONS

2.1. Existing Road Network

The subject property is located in the southeast corner of Highway 50 (Queen Street) and Side Road 5 intersection in the Town of Caledon (Bolton) ON. The road network description is as follows:

Queensgate Boulevard is an east-west local roadway under the jurisdiction of the Town of Caledon. Queensgate Boulevard in the vicinity of the subject site has a four (4) lane cross section and maintains a posted speed limit of 60 km/h. Turning lanes are provided on approach to Queensgate Boulevard / Landsbridge Street.

Landsbridge Street is a north-south local road under the jurisdiction of the Town of Caledon. Landsbridge in the vicinity of the subject site has a two (2)-lane cross section and maintains a posted speed limit of 40 km/h. Turning lanes are provided on approach to Queensgate Boulevard. Landsbridge Street meets Queensgate Boulevard as a signalized intersection.

Hanton Crescent is an east-west local road under the jurisdiction of the Town of Caledon. Hanton Crescent has a two (2)-lane cross section and maintains a posted speed limit of 40 km/h. Hanton Crescent meets Landsbridge Street as an unsignalized intersection.

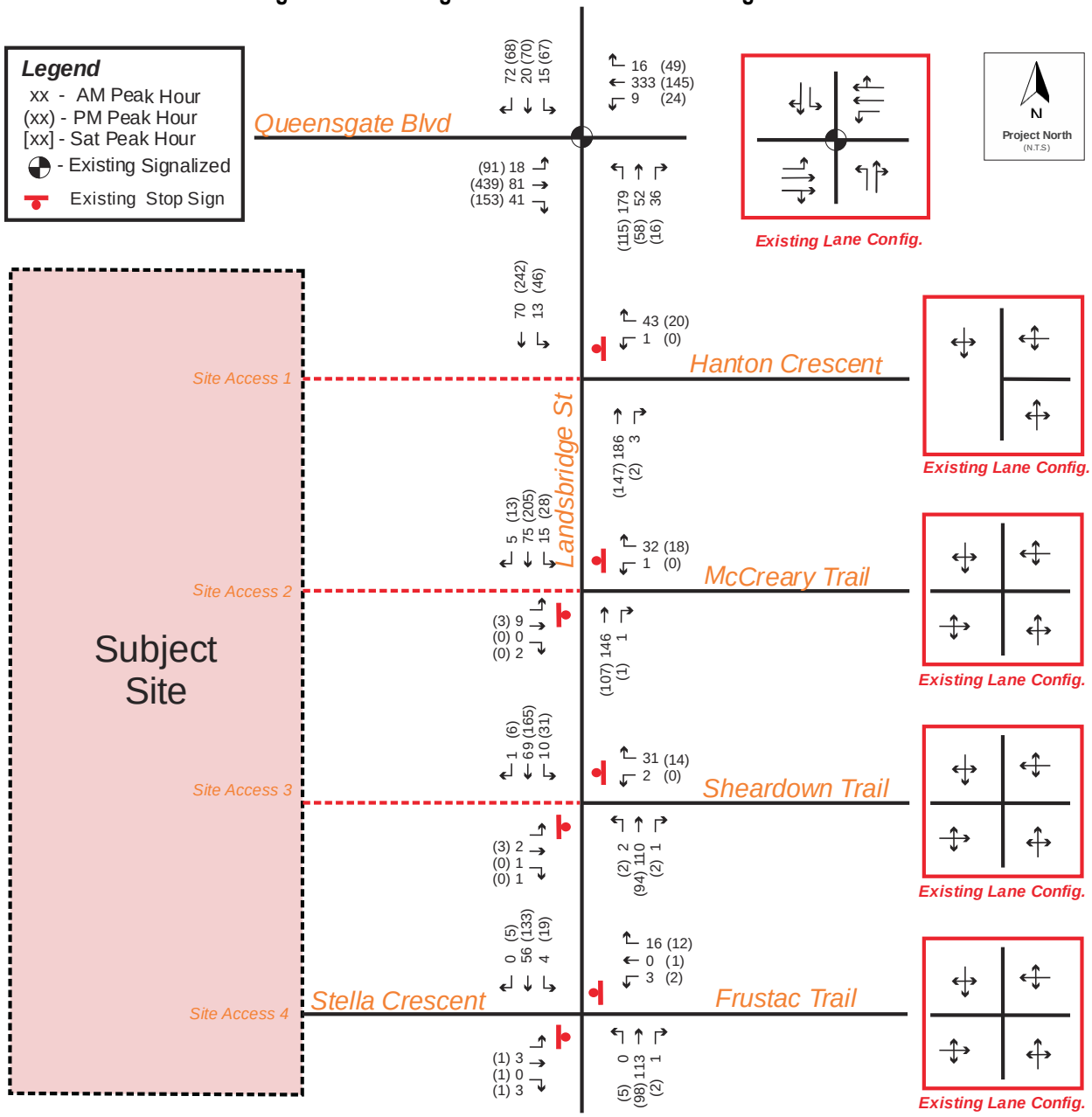
McCreary Trail is an east-west local road under the jurisdiction of the Town of Caledon. McCreary Trail has a two (2)-lane cross section and maintains a posted speed limit of 40 km/h. McCreary Trail meets Landsbridge Street as an unsignalized intersection.

Sheardown Trail is an east-west local road under the jurisdiction of the Town of Caledon. Sheardown Trail has a two (2)-lane cross section and maintains a posted speed limit of 40 km/h. Sheardown Trail meets Landsbridge Street as an unsignalized intersection.

Stella Crescent is an east-west local road under the jurisdiction of the Town of Caledon. Stella Crescent has a two (2)-lane cross section and maintains a posted speed limit of 40 km/h. Stella Crescent meets Landsbridge Street as an unsignalized intersection.

The existing road network and existing traffic volumes during the weekday AM and PM peak hours are illustrated in Figure **2-1**:

Figure 2-1: Existing Traffic Volumes / Lane Configurations



2.2. Data Collection

The Study Area includes the intersections of Queensgate Blvd / Landsbridge Street, Landsbridge Street / Hanton Crescent and Landsbridge Street / Stella Crescent. Spectrum Traffic Data Inc. during weekday AM (7:00-9:00) and PM (4:00-6:00) peak hours conducted turning movement counts on Wednesday, March 9, 2016 and Wednesday, December 7, 2016. The detailed traffic data is provided in **Appendix B**.

2.3. Existing Capacity Analysis

Capacity analysis at the studied area intersections was carried out using Synchro version 8. **Table 2.1** shows the existing levels of service for the given intersection. A detailed capacity analysis is provided in **Appendix C.**

Table 2.1: Existing Traffic Levels of Service

Intersection	Movement	Weekday AM Peak Hour		Weekday PM Peak Hour	
		v/c ratio	Delay (s)	v/c ratio	Delay (s)
Queensgate Blvd / Landsbridge Street (Signalized)	**OVERALL**	**B (0.37)**	**16.9**	**B (0.37)**	**19.1**
	EBL	C (0.20)	22.9	C (0.40)	23.3
	EBTR	C (0.19)	22.4	C (0.68)	26.6
	WBL	C (0.09)	21.9	C (0.32)	23.4
	WBTR	C (0.63)	26.2	C (0.23)	21.5
	NBL	A (0.28)	7.5	A (0.23)	8.5
	NBTR	A (0.14)	6.2	A (0.09)	7.3
	SBL	A (0.04)	5.6	A (0.10)	7.4
	SBTR	A (0.09)	5.9	A (0.17)	7.8
Landsbridge Street / Hanton Crescent (Unsignalized)	WBLR	B (0.08)	10.2	A (0.05)	9.6
	SBTL	A (0.02)	1.5	A (0.05)	1.9
Landsbridge Street / Stella Crescent (Unsignalized)	EBLTR	A (0.01)	9.7	B (0.02)	10.8
	WBLTR	A (0.03)	9.6	A (0.03)	9.9
	NBLRT			A (0.01)	0.5
	SBLTR	A (0.01)	0.8	A (0.02)	1.4
Landsbridge St / McCreary Trail (Unsignalized)	EBLTR	B (0.03)	10.7	B (0.02)	13.2
	WBLTR	A (0.07)	9.5	A (0.04)	9.2
	SBLTR	A (0.02)	2.0	A (0.03)	1.5
Landsbridge St / Stella Crescent / Sheardown Trail (Unsignalized)	EBLTR	B (0.02)	10.1	B (0.02)	12.3
	WBLTR	A (0.05)	9.2	A (0.02)	9.0
	NBTLR	A (0.01)	0.5	A (0.00)	0.2
	SBLTR	A (0.01)	1.0	A (0.03)	1.5

Table 2.1 indicates that all study area intersections are currently operating at excellent levels of service and are operating at overall LOS 'B' or better during peak hour time periods. Furthermore, all individual turning movements are operating below capacity with acceptable LOS with no critical movements identified.

3.0 FUTURE BACKGROUND CONDITIONS

A five (5)-year (2021) horizon period was selected for analysis, which generally coincides with the full build out of the proposed development. As mentioned earlier, a 2% growth rate per annum for the north-south and east-west through movement traffic volumes at the study area intersections was applied.

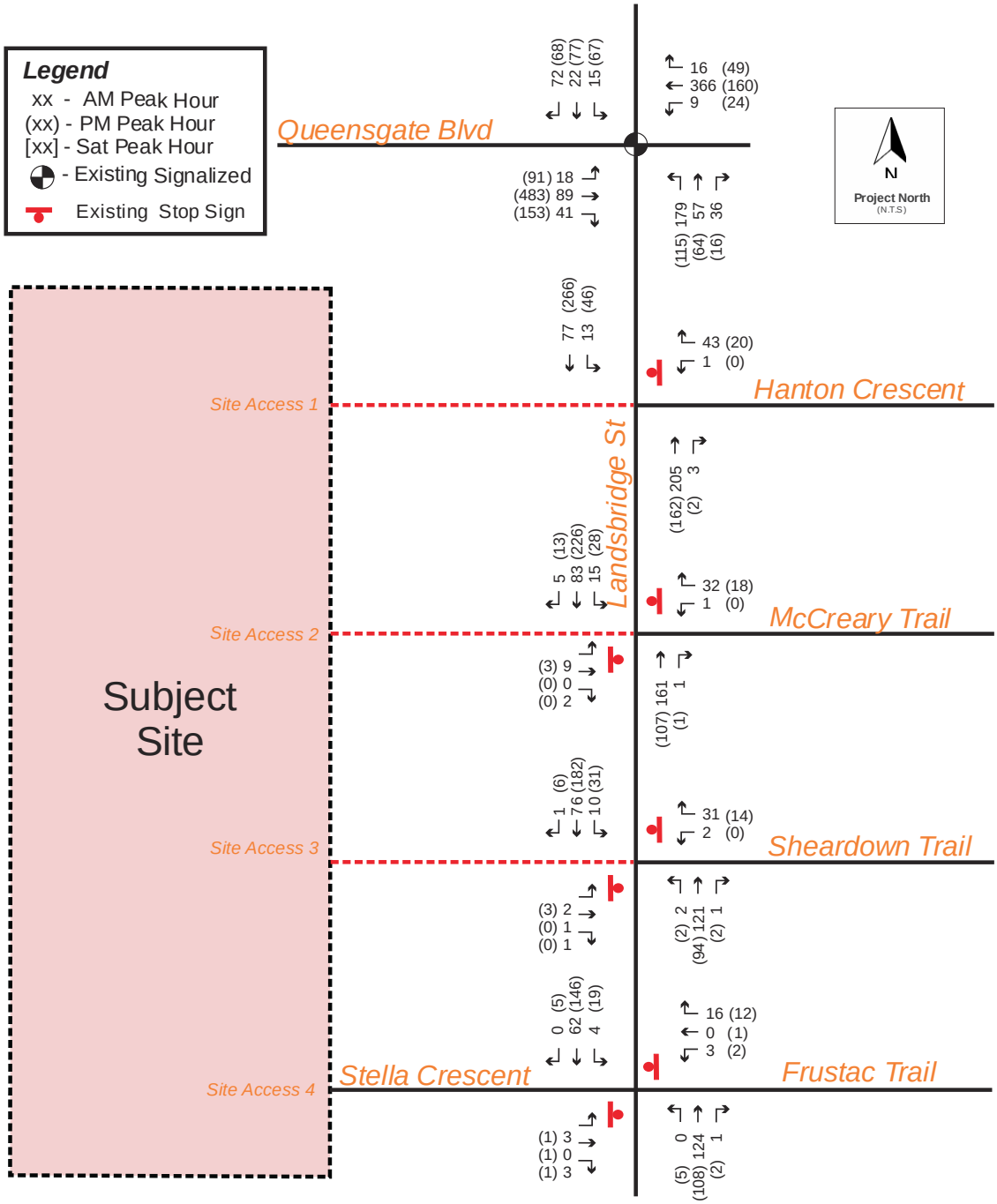
The future (2021) background traffic volumes are provided in **Figure 3-1. Table 3.1** summarizes the level of service at the given intersections under future background traffic conditions. Detailed output analysis can be found in **Appendix D**.

Table 3.1: Future (2021) Background Traffic Levels of Service

Intersection	Movement	Weekday AM Peak Hour		Weekday PM Peak Hour	
		v/c ratio	Delay (s)	v/c ratio	Delay (s)
Queensgate Blvd / Landsbridge Street (Signalized)	**OVERALL**	**B (0.38)**	**17.3**	**B (0.39)**	**19.4**
	EBL	C (0.20)	22.7	C (0.39)	22.9
	EBTR	C (0.20)	22.1	C (0.71)	26.9
	WBL	C (0.09)	21.6	C (0.34)	23.4
	WBTR	C (0.64)	26.3	C (0.25)	21.3
	NBL	A (0.29)	7.9	A (0.24)	9.0
	NBTR	A (0.15)	6.7	A (0.10)	7.8
	SBL	A (0.04)	6.0	A (0.11)	7.9
	SBTR	A (0.09)	6.3	A (0.18)	8.3
Landsbridge Street / Hanton Crescent (Unsignalized)	WBLR	B (0.08)	10.4	A (0.05)	9.7
	SBLT	A (0.02)	1.4	A (0.05)	1.8
Landsbridge Street / Stella Crescent (Unsignalized)	EBLTR	A (0.01)	9.8	B (0.02)	11.0
	WBLTR	A (0.03)	9.7	B (0.03)	10.1
	NBLTR			A (0.01)	0.5
	SBLTR	A (0.01)	0.8	A (0.02)	1.4
Landsbridge St & McCreary Trail (Unsignalized)	EBLTR	B (0.03)	10.9	B (0.02)	13.5
	WBLTR	A (0.07)	9.7	A (0.04)	9.2
	SBLTR	A (0.02)	1.9	A (0.03)	1.4
Landsbridge St / Stella Crescent / Sheardown Trail (Unsignalized)	EBLTR	B (0.02)	10.2	B (0.02)	12.5
	WBLTR	A (0.05)	9.3	A (0.02)	9.0
	NBTLR	A (0.01)	0.4	A (0.00)	0.2
	SBLTR	A (0.01)	0.9	A (0.03)	1.4

As summarized in Table 3.1 it is shown that during future background traffic conditions, the subject study area intersections continue to operate at overall excellent level of services with no changes to expected operations. During future background traffic conditions, the intersections are operating at overall LOS 'B' or better during the peak hour periods.

Figure 3-1: Future (2021) Background Traffic Volumes



4.0 SITE TRAFFIC TRIP GENERATION, TRIP DISTRIBUTION / ASSIGNMENT

According to the site plan, the proposed development comprises of 113 Condominium Townhouse units and one (1) single detached dwelling unit. A private condominium road with multiple connections to the external public municipal road network will service the condominium block. Trip generation for the residential units were determined using the maximum trips based on equations and rates contained in the *Trip Generation Manual*, *9th Edition*, published by the ITE for the *Low-Rise Residential Condominium/Townhouse (Land Use Code 231) and Single Family Detached Housing (Land Use Code 210)*. The expected trip generation calculation is provided in **Table 4.1**.

Table 4.1: Site Traffic Trip Generation

Land Use (Size)	Parameter	Weekday AM Peak Hour			Weekday PM Peak Hour		
		In	Out	Total	In	Out	Total
Low-Rise Residential Condominium/Townhouse (113 Units)	Trip Rate	0.17	0.50	0.67	0.45	0.33	0.78
	New Trips	19	57	76	51	37	88
Single Family Detached Housing (1 Units)	Trip Rate	0.00	1.00	1.00	1.00	1.00	2.00
	New Trips	0	1	1	1	1	2
Total Trips		**19**	**58**	**77**	**52**	**38**	**90**

Based on the trip generation calculations, the proposed and future background residential development is expected to generate 77 two-way trips (19 inbound and 58 outbound) during the weekday morning peak hour and 90 two-way trips (52 inbound and 38 outbound) during the afternoon peak hour.

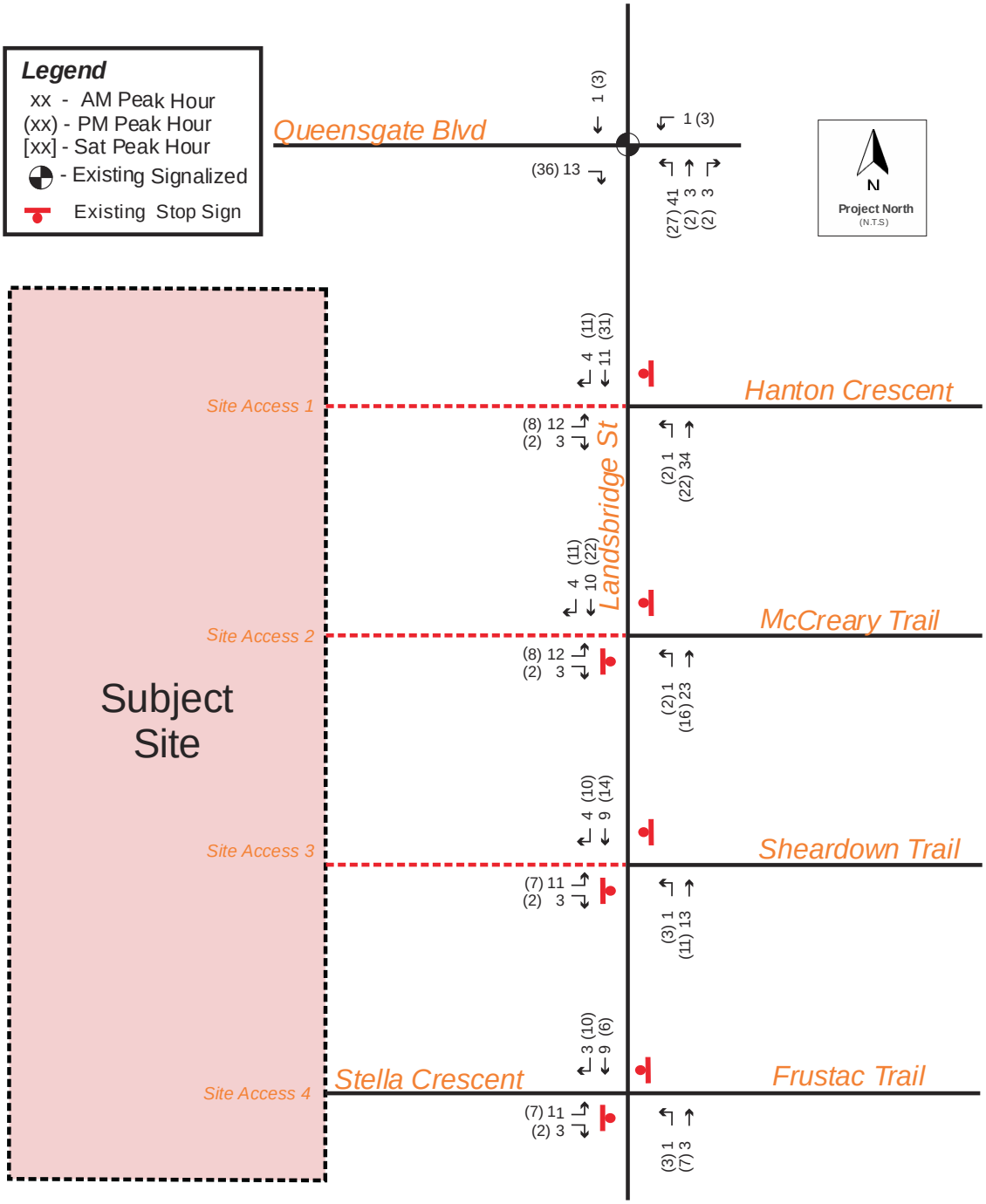
To remain conservative, no trip reductions were applied to account for transit or other modes of transport. In addition, site traffic was assigned to two (2) of the multiple road networks (ie. Hanton Crescent / Landsbridge Street and Stella Crescent / Landsbridge Street) to assess worst case scenario.

Provided in **Table 4.2** are the assumptions for the trip distribution rates. It is based on the information extracted from the 2011 Transportation Tomorrow Survey (TTS) and the existing road pattern (**see Appendix G**). The site traffic volumes are summarized in **Figure 4-1.**

Table 4.2: Site Traffic Trip Distribution

Direction	Via	Trips In	Trips Out
North	Landsbridge St	5%	5%
South	Landsbridge St	20%	20%
East	Queensgate Blvd	5%	5%
West	Queensgate Blvd	70%	70%
Total		**100%**	**100%**

Figure 4-2: Site Traffic Volumes



5.0 FUTURE TOTAL TRAFFIC CONDITIONS

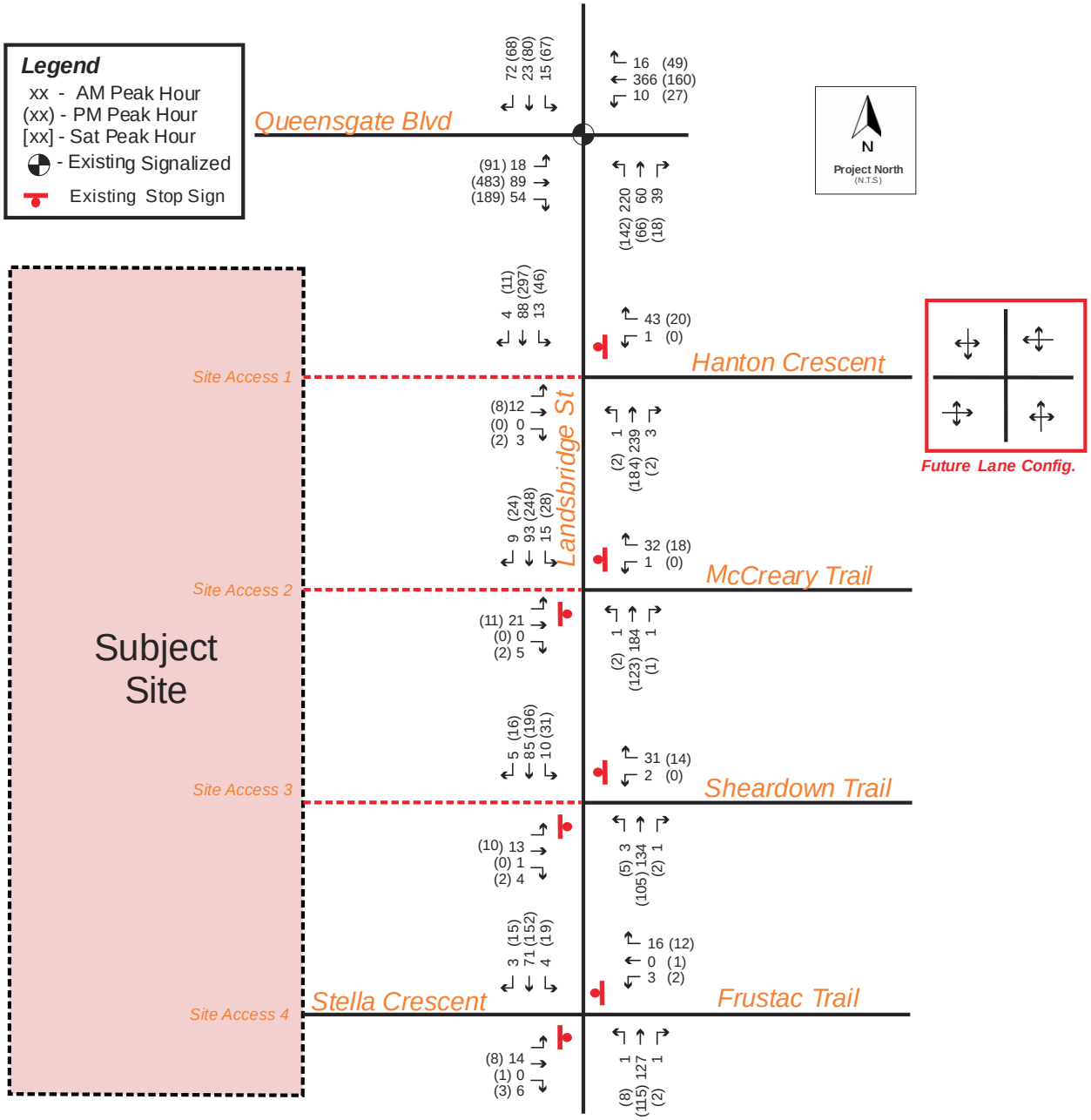
Future total traffic was determined by adding site generated traffic to future background traffic volumes during the weekday AM and PM peak hours, and is illustrated in **Figure 5-1.** **Table 5.1** summarizes the level of services at the intersections under future background traffic conditions. Detailed analysis outputs are provided in **Appendix E**.

Table 5.1: Future (2021) Total Traffic Levels of Service

Intersection	Movement	Weekday AM Peak Hour		Weekday PM Peak Hour	
		v/c ratio	Delay (s)	v/c ratio	Delay (s)
Queensgate Blvd / Landsbridge Street (Signalized)	**OVERALL**	**B (0.43)**	**17.1**	**B (0.43)**	**19.5**
	EBL	C (0.20)	22.7	C (0.37)	22.5
	EBTR	C (0.21)	22.1	C (0.71)	26.9
	WBL	C (0.10)	21.6	C (0.40)	24.2
	WBTR	C (0.64)	26.3	C (0.24)	21.0
	NBL	A (0.36)	8.6	B (0.30)	10.1
	NBTR	A (0.17)	6.7	A (0.11)	8.2
	SBL	A (0.04)	6.0	A (0.11)	8.3
	SBTR	A (0.09)	6.3	A (0.19)	8.8
Landsbridge Street / Hanton Crescent (Unsignalized)	EBLTR	B (0.03)	11.8	B (0.03)	14.3
	WBLTR	A (0.06)	10.0	A (0.03)	9.4
	NBLTR	A (0.00)	0.0	A (0.00)	0.1
	SBLTR	A (0.01)	1.0	A (0.04)	1.3
Landsbridge Street / Stella Crescent (Unsignalized)	EBLTR	B (0.04)	10.6	B (0.09)	12.0
	WBLTR	A (0.03)	9.8	B (0.03)	10.3
	NBLTR	A (0.00)	0.2	A (0.01)	0.7
	SBLTR	A (0.01)	0.6	A (0.02)	1.2
Landsbridge St & McCreary Trail (Unsignalized)	EBLTR	B (0.08)	11.6	B (0.09)	14.1
	WBLTR	A (0.08)	9.9	A (0.04)	9.3
	SBLTR	A (0.00)	0.2	A (0.01)	0.4
		A (0.02)	1.7	A (0.03)	1.3
Landsbridge St / Stella Crescent / Sheardown Trail (Unsignalized)	EBLTR	B (0.07)	10.9	B (0.07)	12.8
	WBLTR	A (0.05)	9.4	A (0.02)	9.1
	NBTLR	A (0.01)	0.6	A (0.01)	0.6
	SBLTR	A (0.01)	0.7	A (0.03)	1.3

As summarized in Table 5.1, it is shown that during future total traffic conditions, the subject study area intersections continue to operate at excellent levels of services with only minor changes and no critical movements identified. Under Future Total Traffic conditions, the study area intersections are operating at overall LOS 'C' or better during the peak hour periods. Based on above, it is our opinion that the site entrances as they operate today and in the future have negligible impact to the future operations of Landsbridge Street and may remain in their current state.

Figure 5-1: Future (2021) Total Traffic Volumes



6.0 PARKING

As mentioned earlier, at a minimum, two (2) car parking spaces will be provided in a garage and lead in driveway portion for 14 condominium townhouse units, four (4) semi detached units and one (1) single detached unit. The remaining 95 condominium townhouse units will consist of four (4) car parking spaces per unit with two (2) in garage and lead in driveway portion. A total of 20 visitor parking spaces are provided to the 102 non-freehold condominium town house units totaling an overall quantum parking supply of 438 parking spaces to serve the entire development. The proposed development is subject to the Town of Caledon Zoning By-law. **Table 6.1** summarizes the parking requirements based on the By-law.

Table 6.1: Vehicular Parking Zoning By-law Requirement

Use	Units	Parking Strategy	
		Minimum Parking Rate	Parking Spaces Required
Detached & Semi-Detached Dwelling	5	2.0 spaces per unit	10
Townhouse Dwelling	109	2.0 spaces per unit	218
Townhouse Dwelling	109	0.25 spaces per unit *	27
Total Required			255
Total Provided			438
Difference			+183

**visitor parking rate*

The proposed development is required to provide 255 parking spaces and the site plan depicts 438 spaces, which results in parking surplus of 183 spaces. The parking supply is sufficient as it meets the requirements of the By-Law.

7.0 SITE ACCESS & ON-SITE CIRCULATION

The proposed development will provide a full movement access from Landsbridge Street via Hanton Crescent, Queensland Crescent and Stella Crescent (i.e. north and south). Based on the results of the future total Synchro outputs, there will not be any inbound or outbound queuing issues. Furthermore, the site access will operate at excellent levels of services and will not require auxiliary lanes due to the low site related traffic volumes.

A truck turning path assessment was conducted to evaluate the expected movements of garbage truck to and from the proposed development site. An AutoTURN analysis was undertaken using a typical 12.0 meter City Garbage Truck (HSUTAC) as illustrated in **Appendix F**. The analysis demonstrates that a typical garbage truck can maneuver within the designated route with no conflict. As a result, moving trucks under 12.0 meters can sufficiently access the subject site.

CONCLUSIONS / FINDINGS

The findings and conclusions of our analysis are as follows:

- The subject development application proposes to provide 109 condominium townhouse units of which seven (7) freehold units, four (4) semi detached units and one (1) single detached dwelling unit.
- The proposed and future background residential development is expected to generate 77 two-way trips (19 inbound and 58 outbound) during the weekday morning peak hour and 90 two-way trips (52 inbound and 38 outbound) during the afternoon peak hour.
- The proposed site will have a minor impact on the study area intersections operations during Weekday AM and PM peak hours.
- A private condominium road with multiple connections to the external public municipal road network will service the condominium blocks.
- Due to the low traffic activity at site entrances, the closure of Side Road 5 will have no consequent to the remaining site entrances operations. As a result, site traffic accessing multiple roadways (ie. Hanton Crescent, Queensland Crescent and Stella Crescent (i.e. north and south) will not be detrimental to Landsbridge Street considering traffic and site operations are minimal for vehicle transportation purposes.
- Garbage and emergency vehicles will be able to circulate within the proposed site and exit the site in a cab forward manner.
- The overall quantum of parking supply as proposed is acceptable and will not negatively affect the overall peak period visitor parking demands, as visitor over flow (if required) can be provided within individual units.

Appendix A - Proposed Site Plan

TRUE NORTH

SITE STATS

5.55□ SINGLE CAR -	14 UNITS
6.00□ DOUBLE CAR -	61 UNITS
4.60□ DOUBLE CAR -	34 UNITS
SEMI-DETACHED -	4 UNITS
SINGLE -	1 UNIT
TOTAL -	114 UNITS

9	REVISED AS PER COMMENTS	MAR.17.17	KA
8	ISSUED FOR CLIENT REVIEW	FEB.16.17	KA
7	ISSUED FOR SPA SUBMISSION 1	JUN. 6.16	KA
6	REVISED AS PER CLIENT COMMENTS	MAY 19.16	KA
5	REVISED AS PER COMMENTS	APR. 7.16	KA
4	REVISED AS PER COMMENTS	APR. 6.16	KA
3	REVISED AS PER COMMENTS	APR. 4.16	KA
2	REVISED AS PER COMMENTS	MAR. 24.16	KA
1	ISSUED FOR CLIENT REVIEW	MAR. 24.16	KA

REVISIONS

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Client: TREASURE HILL

Project: VILLALAGO RESIDENCES INC.

Sheet Title: SITEPLAN

Drawn By: NL	Checked By:
Project No: 16-33	Page: A1.1
Scale: 1:400	

DRAFT FOR DISCUSSION ONLY

Appendix B - Existing Traffic Data

NexTrans
4261-A14 Highway 7 East
Suite 489
Markham ON, CANADA, L3R 9W6

Turning Movement Count (3 . LANDSBRIDGE STREET & QUEENSGATE BOULEVARD (SIGNALIZED)) MioID: 297215

Start Time	N Approach LANDSBRIDGE STREET					E Approach QUEENSGATE BOULEVARD					S Approach LANDSBRIDGE STREET					W Approach QUEENSGATE BOULEVARD					Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	Peds W:	Approach Total		
07:00:00	25	1	3	1	29	3	83	0	1	86	0	1	44	0	45	8	5	2	0	15	175	
07:15:00	22	2	2	1	26	5	63	1	1	69	2	6	39	1	47	2	8	3	0	13	155	
07:30:00	17	5	4	1	26	5	90	1	2	96	4	4	55	0	63	15	14	6	1	35	220	
07:45:00	17	3	1	0	21	4	105	0	1	109	7	8	45	1	60	9	19	2	0	30	220	770
08:00:00	19	7	3	0	29	1	60	3	4	64	6	7	53	0	66	8	16	7	0	31	190	785
08:15:00	23	5	6	0	34	4	86	1	0	91	7	11	39	0	57	13	16	4	0	33	215	845
08:30:00	13	5	5	0	23	7	82	5	2	94	16	26	42	0	84	11	30	5	0	46	247	872
08:45:00	14	16	2	0	32	3	68	5	3	76	4	11	35	0	50	16	30	6	4	52	210	862
BREAK																						
16:00:00	16	20	12	1	48	13	38	3	0	54	5	5	20	0	30	26	82	22	5	130	262	
16:15:00	21	19	14	3	54	6	49	4	5	59	7	10	23	6	40	32	78	16	1	126	279	
16:30:00	16	14	18	0	48	11	33	4	4	48	2	18	22	3	42	40	106	19	0	165	303	
16:45:00	20	16	19	3	55	13	45	10	10	68	3	13	39	3	55	36	102	24	10	162	340	1184
17:00:00	15	12	13	3	40	14	30	5	4	49	2	16	24	1	42	42	115	28	2	185	316	1238
17:15:00	17	28	17	4	62	11	37	5	4	53	9	11	30	8	50	35	116	20	3	171	336	1295
17:30:00	10	14	10	2	34	13	34	1	1	48	3	6	31	2	40	40	78	24	6	142	264	1256
17:45:00	16	9	18	1	43	10	36	5	2	51	5	15	33	0	53	40	60	20	2	120	267	1183
Grand Total	281	176	147	20	604	123	939	53	44	1115	82	168	574	25	824	373	875	208	34	1456	**3999**	-
Approach%	46.5%	29.1%	24.3%		-	11%	84.2%	4.8%		-	10%	20.4%	69.7%		-	25.6%	60.1%	14.3%		-	**-**	-
Totals %	7%	4.4%	3.7%		15.1%	3.1%	23.5%	1.3%		27.9%	2.1%	4.2%	14.4%		20.6%	9.3%	21.9%	5.2%		36.4%	**-**	-
Heavy	4	5	2		-	2	11	1		-	3	2	8		-	8	9	3		-	**-**	-
Heavy %	1.4%	2.8%	1.4%		-	1.6%	1.2%	1.9%		-	3.7%	1.2%	1.4%		-	2.1%	1%	1.4%		-	**-**	-

NexTrans
4261-A14 Highway 7 East
Suite 489
Markham ON, CANADA, L3R 9W6

Peak Hour: 07:45 AM - 08:45 AM

Start Time	N Approach LANDSBRIDGE STREET					E Approach QUEENSGATE BOULEVARD					S Approach LANDSBRIDGE STREET					W Approach QUEENSGATE BOULEVARD					Int. Total (15 min)
	Right	Thru	Left	Peds	Approach Total	Right	Thru	Left	Peds	Approach Total	Right	Thru	Left	Peds	Approach Total	Right	Thru	Left	Peds	Approach Total	
07:45:00	17	3	1	0	21	4	105	0	1	109	7	8	45	1	60	9	19	2	0	30	220
08:00:00	19	7	3	0	29	1	60	3	4	64	6	7	53	0	66	8	16	7	0	31	190
08:15:00	23	5	6	0	34	4	86	1	0	91	7	11	39	0	57	13	16	4	0	33	215
08:30:00	13	5	5	0	23	7	82	5	2	94	16	26	42	0	84	11	30	5	0	46	247
Grand Total	72	20	15	0	107	16	333	9	7	358	36	52	179	1	267	41	81	18	0	140	**872**
Approach%	67.3%	18.7%	14%		-	4.5%	93%	2.5%		-	13.5%	19.5%	67%		-	29.3%	57.9%	12.9%		-	**-**
Totals %	8.3%	2.3%	1.7%		12.3%	1.8%	38.2%	1%		41.1%	4.1%	6%	20.5%		30.6%	4.7%	9.3%	2.1%		16.1%	**-**
PHF	0.78	0.71	0.63		0.79	0.57	0.79	0.45		0.82	0.56	0.5	0.84		0.79	0.79	0.68	0.64		0.76	**-**
Heavy	4	3	2		9	0	5	1		6	1	1	5		7	3	2	2		7	**-**
Heavy %	5.6%	15%	13.3%		8.4%	0%	1.5%	11.1%		1.7%	2.8%	1.9%	2.8%		2.6%	7.3%	2.5%	11.1%		5%	**-**
Lights	68	17	13		98	16	328	8		352	35	51	174		260	38	79	16		133	**-**
Lights %	94.4%	85%	86.7%		91.6%	100%	98.5%	88.9%		98.3%	97.2%	98.1%	97.2%		97.4%	92.7%	97.5%	88.9%		95%	**-**
Single-Unit Trucks	1	0	0		1	0	0	1		1	0	0	1		1	0	0	0		0	**-**
Single-Unit Trucks %	1.4%	0%	0%		0.9%	0%	0%	11.1%		0.3%	0%	0%	0.6%		0.4%	0%	0%	0%		0%	**-**
Buses	3	3	2		8	0	5	0		5	1	1	4		6	3	2	2		7	**-**
Buses %	4.2%	15%	13.3%		7.5%	0%	1.5%	0%		1.4%	2.8%	1.9%	2.2%		2.2%	7.3%	2.5%	11.1%		5%	**-**
Pedestrians	-	-	-	0	-	-	-	-	7	-	-	-	-	0	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	0%		-	-	-	87.5%		-	-	-	0%		-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	0%		-	-	-	0%		-	-	-	12.5%		-	-	-	0%		**-**
Bicycles on Road	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	0%		-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**

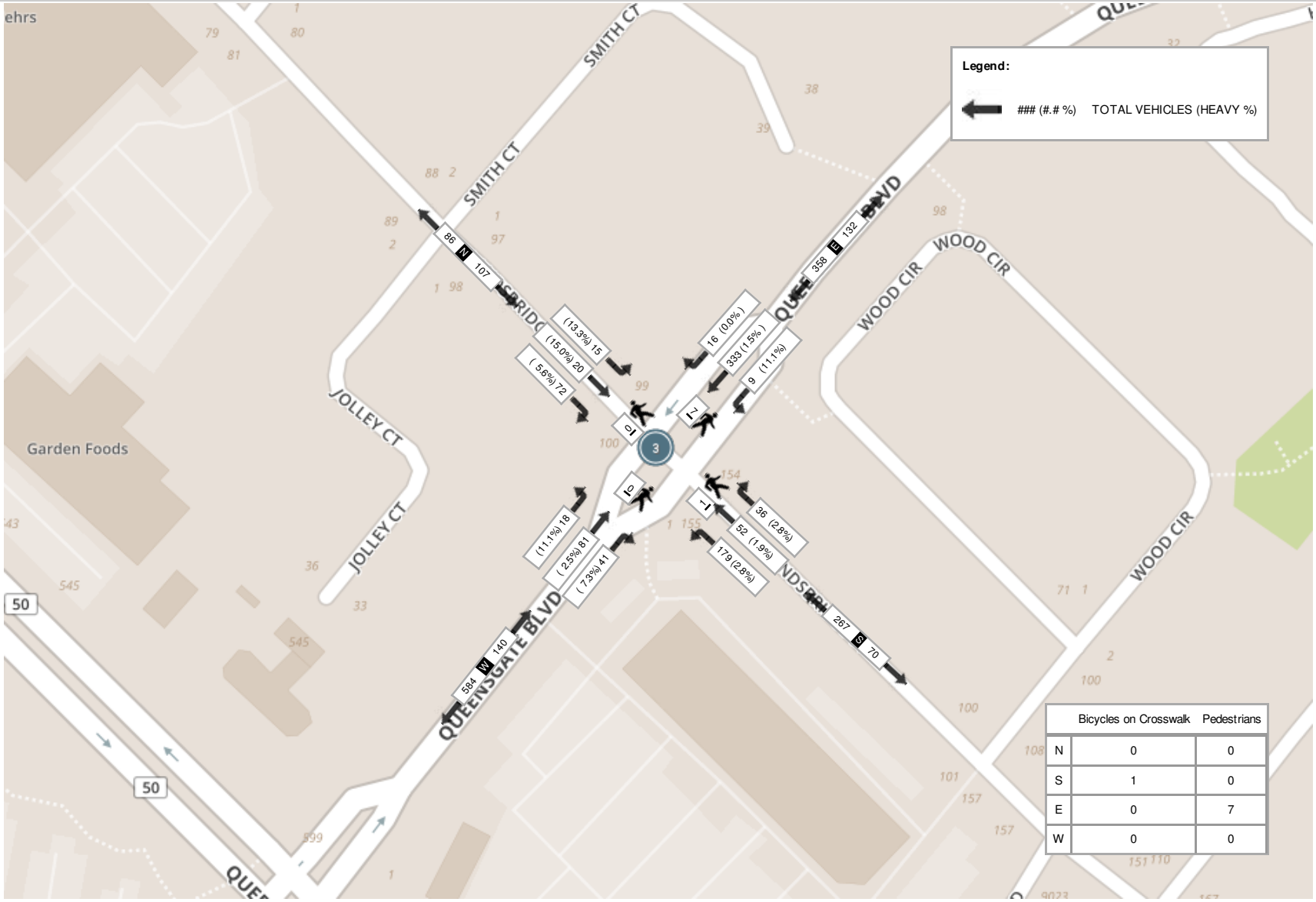
NexTrans
4261-A14 Highway 7 East
Suite 489
Markham ON, CANADA, L3R 9W6

Peak Hour: 04:30 PM - 05:30 PM

Start Time	N Approach LANDSBRIDGE STREET					E Approach QUEENSGATE BOULEVARD					S Approach LANDSBRIDGE STREET					W Approach QUEENSGATE BOULEVARD					Int. Total (15 min)
	Right	Thru	Left	Peds	Approach Total	Right	Thru	Left	Peds	Approach Total	Right	Thru	Left	Peds	Approach Total	Right	Thru	Left	Peds	Approach Total	
16:30:00	16	14	18	0	48	11	33	4	4	48	2	18	22	3	42	40	106	19	0	165	303
16:45:00	20	16	19	3	55	13	45	10	10	68	3	13	39	3	55	36	102	24	10	162	340
17:00:00	15	12	13	3	40	14	30	5	4	49	2	16	24	1	42	42	115	28	2	185	316
17:15:00	17	28	17	4	62	11	37	5	4	53	9	11	30	8	50	35	116	20	3	171	336
Grand Total	68	70	67	10	205	49	145	24	22	218	16	58	115	15	189	153	439	91	15	683	**1295**
Approach%	33.2%	34.1%	32.7%		-	22.5%	66.5%	11%		-	8.5%	30.7%	60.8%		-	22.4%	64.3%	13.3%		-	**-**
Totals %	5.3%	5.4%	5.2%		15.8%	3.8%	11.2%	1.9%		16.8%	1.2%	4.5%	8.9%		14.6%	11.8%	33.9%	7%		52.7%	**-**
PHF	0.85	0.63	0.88		0.83	0.88	0.81	0.6		0.8	0.44	0.81	0.74		0.86	0.91	0.95	0.81		0.92	**-**
Heavy	0	0	0		0	0	1	0		1	0	0	0		0	0	1	0		1	**-**
Heavy %	0%	0%	0%		0%	0%	0.7%	0%		0.5%	0%	0%	0%		0%	0%	0.2%	0%		0.1%	**-**
Lights	68	70	67		205	49	144	24		217	16	58	115		189	153	438	91		682	**-**
Lights %	100%	100%	100%		100%	100%	99.3%	100%		99.5%	100%	100%	100%		100%	100%	99.8%	100%		99.9%	**-**
Single-Unit Trucks	0	0	0		0	0	1	0		1	0	0	0		0	0	1	0		1	**-**
Single-Unit Trucks %	0%	0%	0%		0%	0%	0.7%	0%		0.5%	0%	0%	0%		0%	0%	0.2%	0%		0.1%	**-**
Buses	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	**-**
Buses %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	10	-	-	-	-	20	-	-	-	-	13	-	-	-	-	13	-	**-**
Pedestrians%	-	-	-	16.1%		-	-	-	32.3%		-	-	-	21%		-	-	-	21%		**-**
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	2	-	-	-	-	2	-	-	-	-	2	-	**-**
Bicycles on Crosswalk%	-	-	-	0%		-	-	-	3.2%		-	-	-	3.2%		-	-	-	3.2%		**-**
Bicycles on Road	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	0%		-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**

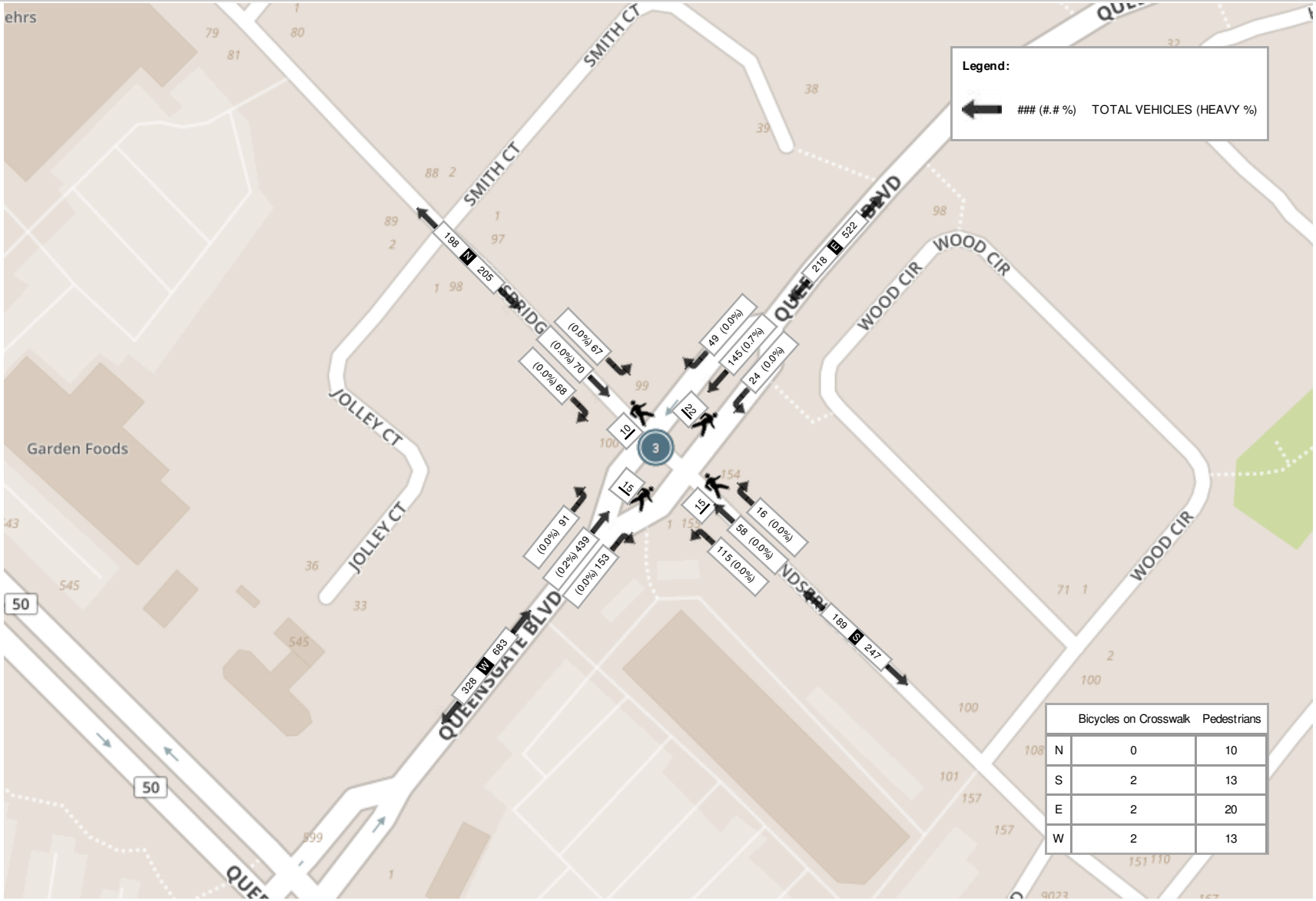
NexTrans
4261-A14 Highway 7 East
Suite 489
Markham ON, CANADA, L3R 9W6

Peak Hour: 07:45 AM - 08:45 AM



NexTrans
4261-A14 Highway 7 East
Suite 489
Markham ON, CANADA, L3R 9W6

Peak Hour: 04:30 PM - 05:30 PM



	Bicycles on Crosswalk	Pedestrians
N	0	10
S	2	13
E	2	20
W	2	13

NexTrans
4261-A14 Highway 7 East
Suite 489
Markham ON, CANADA, L3R 9W6

Turning Movement Count (1 . LANDSBRIDGE STREET & HANTON CRESCENT) MioID: 297212

Start Time	N Approach LANDSBRIDGE STREET				E Approach HANTON CRESCENT				S Approach LANDSBRIDGE STREET				Int. Total (15 min)	Int. Total (1 hr)
	Thru N:S	Left N:E	Peds N:	Approach Total	Right E:N	Left E:S	Peds E:	Approach Total	Right S:E	Thru S:N	Peds S:	Approach Total		
07:00:00	9	1	0	10	9	0	1	9	0	32	0	32	51	
07:15:00	6	2	0	8	10	0	3	10	0	37	3	37	55	
07:30:00	16	3	0	19	9	0	5	9	0	51	0	52	80	
07:45:00	11	0	1	11	6	0	10	6	0	47	0	47	64	250
08:00:00	14	2	1	16	14	1	3	15	2	40	0	42	73	272
08:15:00	17	2	2	19	7	0	7	7	0	50	9	50	76	293
08:30:00	15	4	0	19	11	0	0	11	0	61	0	61	91	304
08:45:00	24	5	0	29	11	0	0	11	1	35	0	36	76	316
BREAK														
16:00:00	60	9	0	69	1	0	6	1	1	29	0	30	100	
16:15:00	47	12	0	59	8	1	5	9	0	32	0	32	100	
16:30:00	63	10	0	73	3	0	1	3	3	28	0	31	107	
16:45:00	50	14	0	64	10	2	16	12	1	40	0	41	117	424
17:00:00	60	13	0	73	1	0	3	1	0	35	0	35	109	433
17:15:00	58	16	4	74	5	0	7	5	1	37	0	38	117	450
17:30:00	60	8	1	68	4	0	7	4	1	31	0	32	104	447
17:45:00	64	9	2	73	10	0	4	10	0	44	0	44	127	457
Grand Total	574	110	11	684	119	4	78	123	10	630	12	640	**1447**	-
Approach%	83.9%	16.1%		-	96.7%	3.3%		-	1.6%	98.4%		-	-	-
Totals %	39.7%	7.6%		47.3%	8.2%	0.3%		8.5%	0.7%	43.5%		44.2%	-	-
Heavy	15	0		-	0	0		-	0	14		-	-	-
Heavy %	2.6%	0%		-	0%	0%		-	0%	2.2%		-	-	-

NexTrans
4261-A14 Highway 7 East
Suite 489
Markham ON, CANADA, L3R 9W6

Peak Hour: 08:00 AM - 09:00 AM

Start Time	N Approach LANDSBRIDGE STREET				E Approach HANTON CRESCENT				S Approach LANDSBRIDGE STREET				Int. Total (15 min)
	Thru	Left	Peds	Approach Total	Right	Left	Peds	Approach Total	Right	Thru	Peds	Approach Total	
08:00:00	14	2	1	16	14	1	3	15	2	40	0	42	73
08:15:00	17	2	2	19	7	0	7	7	0	50	9	50	76
08:30:00	15	4	0	19	11	0	0	11	0	61	0	61	91
08:45:00	24	5	0	29	11	0	0	11	1	35	0	36	76
Grand Total	70	13	3	83	43	1	10	44	3	186	9	189	**316**
Approach%	84.3%	15.7%		-	97.7%	2.3%		-	1.6%	98.4%		-	-
Totals %	22.2%	4.1%		26.3%	13.6%	0.3%		13.9%	0.9%	58.9%		59.8%	-
PHF	0.73	0.65		0.72	0.77	0.25		0.73	0.38	0.76		0.77	-
Heavy	3	0		3	0	0		0	0	4		4	-
Heavy %	4.3%	0%		3.6%	0%	0%		0%	0%	2.2%		2.1%	-
Lights	67	13		80	43	1		44	3	182		185	-
Lights %	95.7%	100%		96.4%	100%	100%		100%	100%	97.8%		97.9%	-
Single-Unit Trucks	0	0		0	0	0		0	0	1		1	-
Single-Unit Trucks %	0%	0%		0%	0%	0%		0%	0%	0.5%		0.5%	-
Buses	3	0		3	0	0		0	0	3		3	-
Buses %	4.3%	0%		3.6%	0%	0%		0%	0%	1.6%		1.6%	-
Pedestrians	-	-	3	-	-	-	10	-	-	-	9	-	-
Pedestrians%	-	-	13.6%		-	-	45.5%		-	-	40.9%		-
Bicycles on Crosswalk	-	-	0	-	-	-	0	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	0%		-	-	0%		-	-	0%		-
Bicycles on Road	0	0	0	-	0	0	0	-	0	0	0	-	-
Bicycles on Road%	-	-	0%		-	-	0%		-	-	0%		-

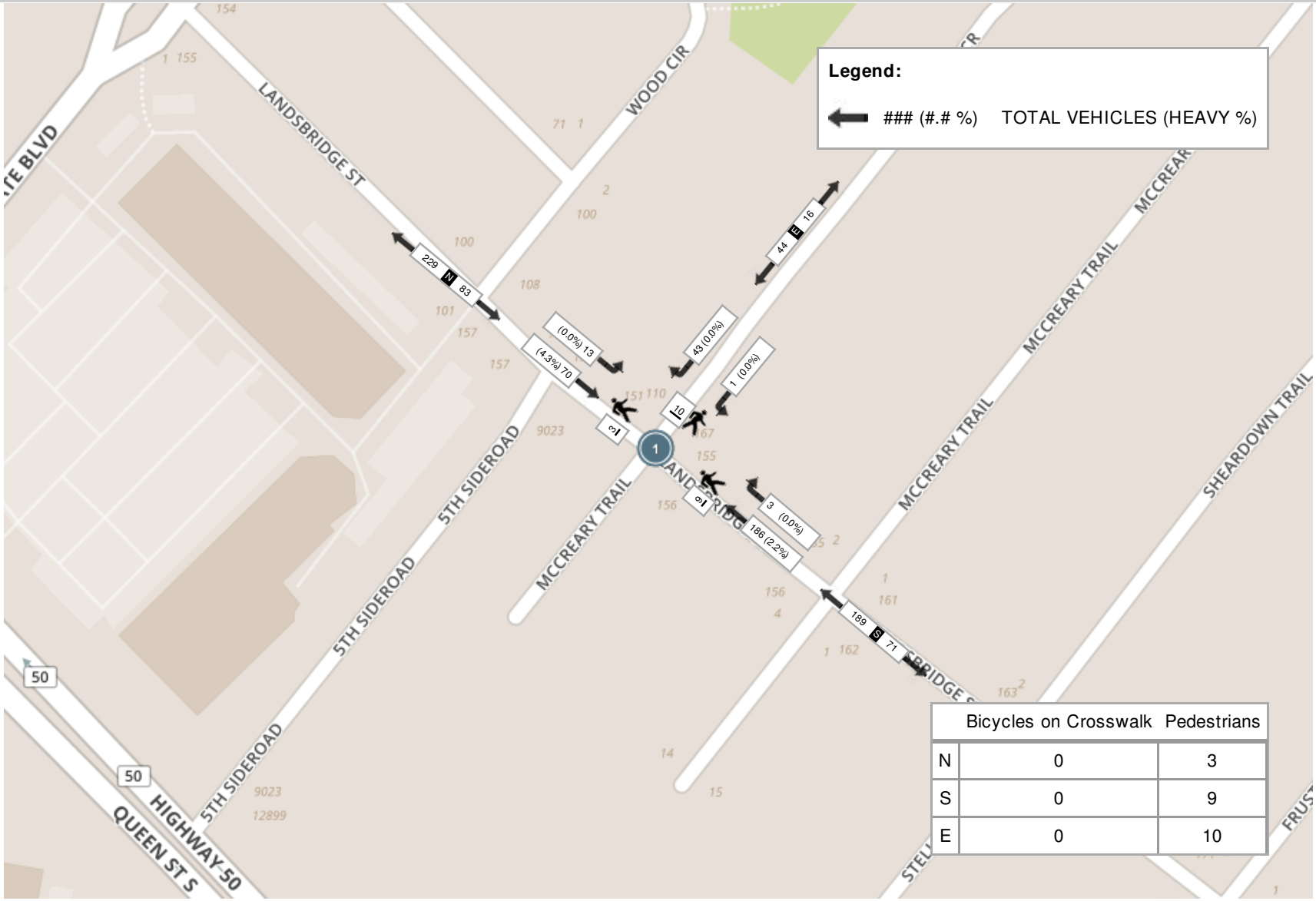
NexTrans
4261-A14 Highway 7 East
Suite 489
Markham ON, CANADA, L3R 9W6

Peak Hour: 05:00 PM - 06:00 PM

Start Time	N Approach LANDSBRIDGE STREET				E Approach HANTON CRESCENT				S Approach LANDSBRIDGE STREET				Int. Total (15 min)
	Thru	Left	Peds	Approach Total	Right	Left	Peds	Approach Total	Right	Thru	Peds	Approach Total	
17:00:00	60	13	0	73	1	0	3	1	0	35	0	35	109
17:15:00	58	16	4	74	5	0	7	5	1	37	0	38	117
17:30:00	60	8	1	68	4	0	7	4	1	31	0	32	104
17:45:00	64	9	2	73	10	0	4	10	0	44	0	44	127
Grand Total	242	46	7	288	20	0	21	20	2	147	0	149	**457**
Approach%	84%	16%		-	100%	0%		-	1.3%	98.7%		-	-
Totals %	53%	10.1%		63%	4.4%	0%		4.4%	0.4%	32.2%		32.6%	-
PHF	0.95	0.72		0.97	0.5	0		0.5	0.5	0.84		0.85	-
Heavy	0	0		0	0	0		0	0	1		1	-
Heavy %	0%	0%		0%	0%	0%		0%	0%	0.7%		0.7%	-
Lights	242	46		288	20	0		20	2	146		148	-
Lights %	100%	100%		100%	100%	0%		100%	100%	99.3%		99.3%	-
Single-Unit Trucks	0	0		0	0	0		0	0	1		1	-
Single-Unit Trucks %	0%	0%		0%	0%	0%		0%	0%	0.7%		0.7%	-
Buses	0	0		0	0	0		0	0	0		0	-
Buses %	0%	0%		0%	0%	0%		0%	0%	0%		0%	-
Pedestrians	-	-	7	-	-	-	20	-	-	-	0	-	-
Pedestrians%	-	-	25%		-	-	71.4%		-	-	0%		-
Bicycles on Crosswalk	-	-	0	-	-	-	1	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	0%		-	-	3.6%		-	-	0%		-
Bicycles on Road	1	0	0	-	0	0	0	-	0	0	0	-	-
Bicycles on Road%	-	-	0%		-	-	0%		-	-	0%		-

NexTrans
4261-A14 Highway 7 East
Suite 489
Markham ON, CANADA, L3R 9W6

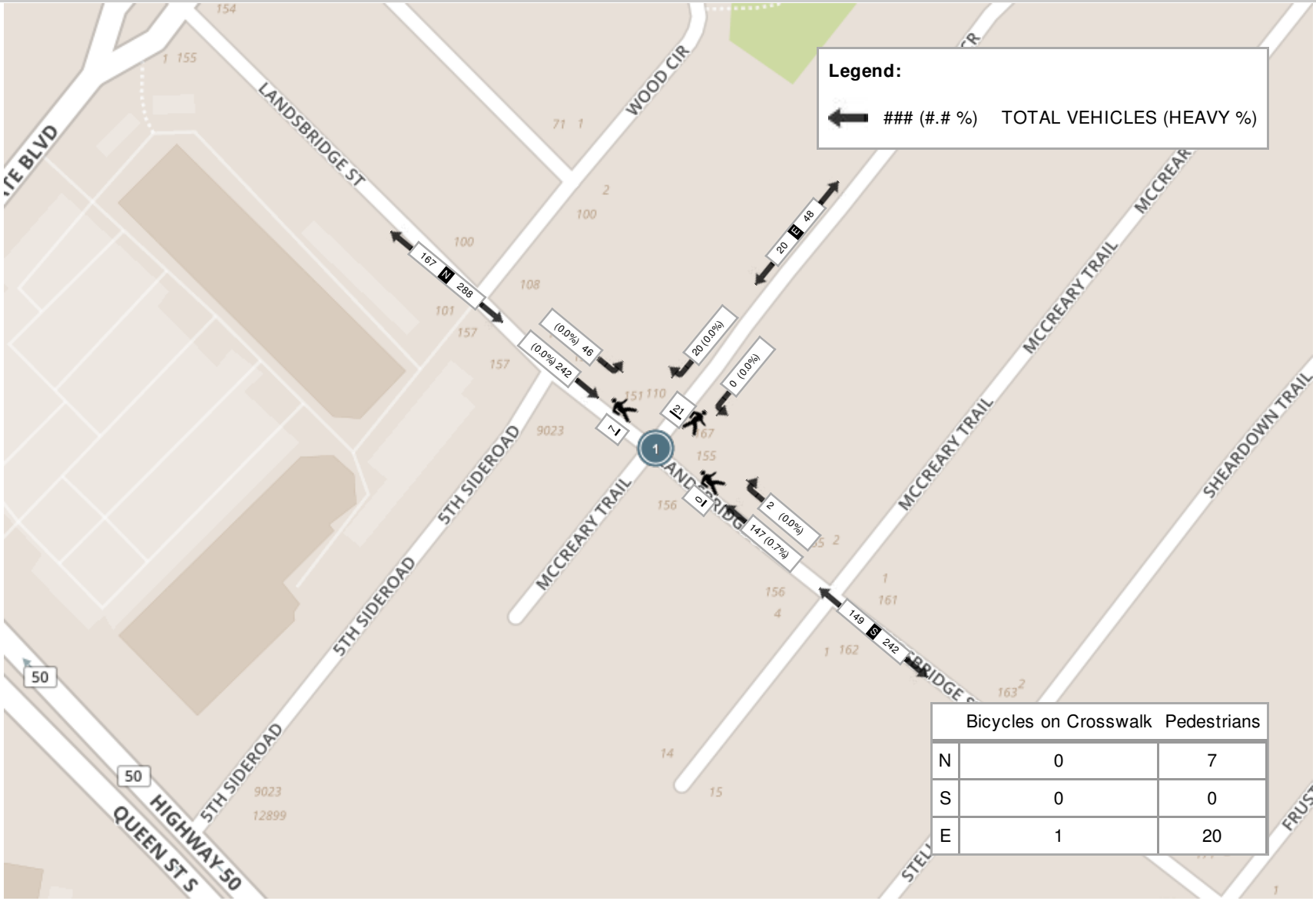
Peak Hour: 08:00 AM - 09:00 AM



	Bicycles on Crosswalk	Pedestrians
N	0	3
S	0	9
E	0	10

NexTrans
4261-A14 Highway 7 East
Suite 489
Markham ON, CANADA, L3R 9W6

Peak Hour: 05:00 PM - 06:00 PM



	Bicycles on Crosswalk	Pedestrians
N	0	7
S	0	0
E	1	20

NexTrans
4261-A14 Highway 7 East
Suite 489
Markham ON, CANADA, L3R 9W6

Turning Movement Count (2 . LANDSBRIDGE STREET & FRUSTAC TRAIL) MioID: 297214

Start Time	N Approach LANDSBRIDGE STREET					E Approach FRUSTAC TRAIL					S Approach LANDSBRIDGE STREET					W Approach FRUSTAC TRAIL					Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	Peds W:	Approach Total		
07:00:00	0	6	0	0	6	3	0	0	0	3	0	16	0	0	16	0	0	0	0	0	25	
07:15:00	0	4	0	0	4	5	0	0	0	5	0	15	0	0	15	0	0	2	0	2	26	
07:30:00	0	16	0	0	16	5	0	0	1	5	0	25	0	2	25	0	0	1	0	1	47	
07:45:00	0	7	1	0	8	3	0	0	3	3	1	23	0	2	24	0	0	2	0	2	37	135
08:00:00	0	7	1	0	8	4	0	1	1	5	1	20	0	0	21	1	0	1	0	2	36	146
08:15:00	0	15	0	4	15	4	0	0	0	4	0	17	0	0	17	1	0	1	0	2	38	158
08:30:00	0	17	2	0	19	5	0	1	1	6	0	46	0	0	46	1	0	0	0	1	72	183
08:45:00	0	17	1	0	18	3	0	1	2	4	0	30	0	0	30	0	0	1	0	1	53	199
BREAK																						
16:00:00	0	46	2	0	48	0	0	0	1	0	1	22	0	0	23	0	0	0	0	0	71	
16:15:00	0	32	3	0	35	1	0	0	5	1	0	22	1	0	23	0	0	0	0	0	59	
16:30:00	0	39	5	0	44	3	0	1	1	4	0	23	0	0	23	1	0	0	0	1	72	
16:45:00	1	34	3	0	38	4	0	1	4	5	0	28	0	0	28	0	0	0	0	0	71	273
17:00:00	0	32	8	0	40	2	0	0	4	2	0	23	1	2	24	0	0	0	4	0	66	268
17:15:00	0	32	3	0	36	3	0	1	3	4	1	23	2	2	26	0	0	1	0	1	67	276
17:30:00	4	35	5	0	44	3	1	0	2	4	1	24	2	0	27	1	1	0	0	2	77	281
17:45:00	3	33	7	0	43	1	0	1	2	2	0	24	0	1	24	0	0	1	0	1	70	280
Grand Total	8	372	41	4	422	49	1	7	30	57	5	381	6	9	392	5	1	10	4	16	**887**	-
Approach%	1.9%	88.2%	9.7%		-	86%	1.8%	12.3%		-	1.3%	97.2%	1.5%		-	31.3%	6.3%	62.5%		-	-	-
Totals %	0.9%	41.9%	4.6%		47.6%	5.5%	0.1%	0.8%		6.4%	0.6%	43%	0.7%		44.2%	0.6%	0.1%	1.1%		1.8%	-	-
Heavy	0	13	0		-	0	0	0		-	0	11	0		-	0	0	0		-	-	-
Heavy %	0%	3.5%	0%		-	0%	0%	0%		-	0%	2.9%	0%		-	0%	0%	0%		-	-	-

NexTrans
4261-A14 Highway 7 East
Suite 489
Markham ON, CANADA, L3R 9W6

Peak Hour: 08:00 AM - 09:00 AM

Start Time	N Approach LANDSBRIDGE STREET					E Approach FRUSTAC TRAIL					S Approach LANDSBRIDGE STREET					W Approach FRUSTAC TRAIL					Int. Total (15 min)
	Right	Thru	Left	Peds	Approach Total	Right	Thru	Left	Peds	Approach Total	Right	Thru	Left	Peds	Approach Total	Right	Thru	Left	Peds	Approach Total	
08:00:00	0	7	1	0	8	4	0	1	1	5	1	20	0	0	21	1	0	1	0	2	36
08:15:00	0	15	0	4	15	4	0	0	0	4	0	17	0	0	17	1	0	1	0	2	38
08:30:00	0	17	2	0	19	5	0	1	1	6	0	46	0	0	46	1	0	0	0	1	72
08:45:00	0	17	1	0	18	3	0	1	2	4	0	30	0	0	30	0	0	1	0	1	53
Grand Total	0	56	4	4	60	16	0	3	4	19	1	113	0	0	114	3	0	3	0	6	**199**
Approach%	0%	93.3%	6.7%		-	84.2%	0%	15.8%		-	0.9%	99.1%	0%		-	50%	0%	50%		-	**-**
Totals %	0%	28.1%	2%		30.2%	8%	0%	1.5%		9.5%	0.5%	56.8%	0%		57.3%	1.5%	0%	1.5%		3%	**-**
PHF	0	0.82	0.5		0.79	0.8	0	0.75		0.79	0.25	0.61	0		0.62	0.75	0	0.75		0.75	**-**
Heavy	0	3	0		3	0	0	0		0	0	4	0		4	0	0	0		0	**-**
Heavy %	0%	5.4%	0%		5%	0%	0%	0%		0%	0%	3.5%	0%		3.5%	0%	0%	0%		0%	**-**
Lights	0	53	4		57	16	0	3		19	1	109	0		110	3	0	3		6	**-**
Lights %	0%	94.6%	100%		95%	100%	0%	100%		100%	100%	96.5%	0%		96.5%	100%	0%	100%		100%	**-**
Single-Unit Trucks	0	0	0		0	0	0	0		0	0	1	0		1	0	0	0		0	**-**
Single-Unit Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0.9%	0%		0.9%	0%	0%	0%		0%	**-**
Buses	0	3	0		3	0	0	0		0	0	3	0		3	0	0	0		0	**-**
Buses %	0%	5.4%	0%		5%	0%	0%	0%		0%	0%	2.7%	0%		2.6%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	4	-	-	-	-	4	-	-	-	-	0	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	50%		-	-	-	50%		-	-	-	0%		-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	0%		-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**
Bicycles on Road	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	0%		-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**

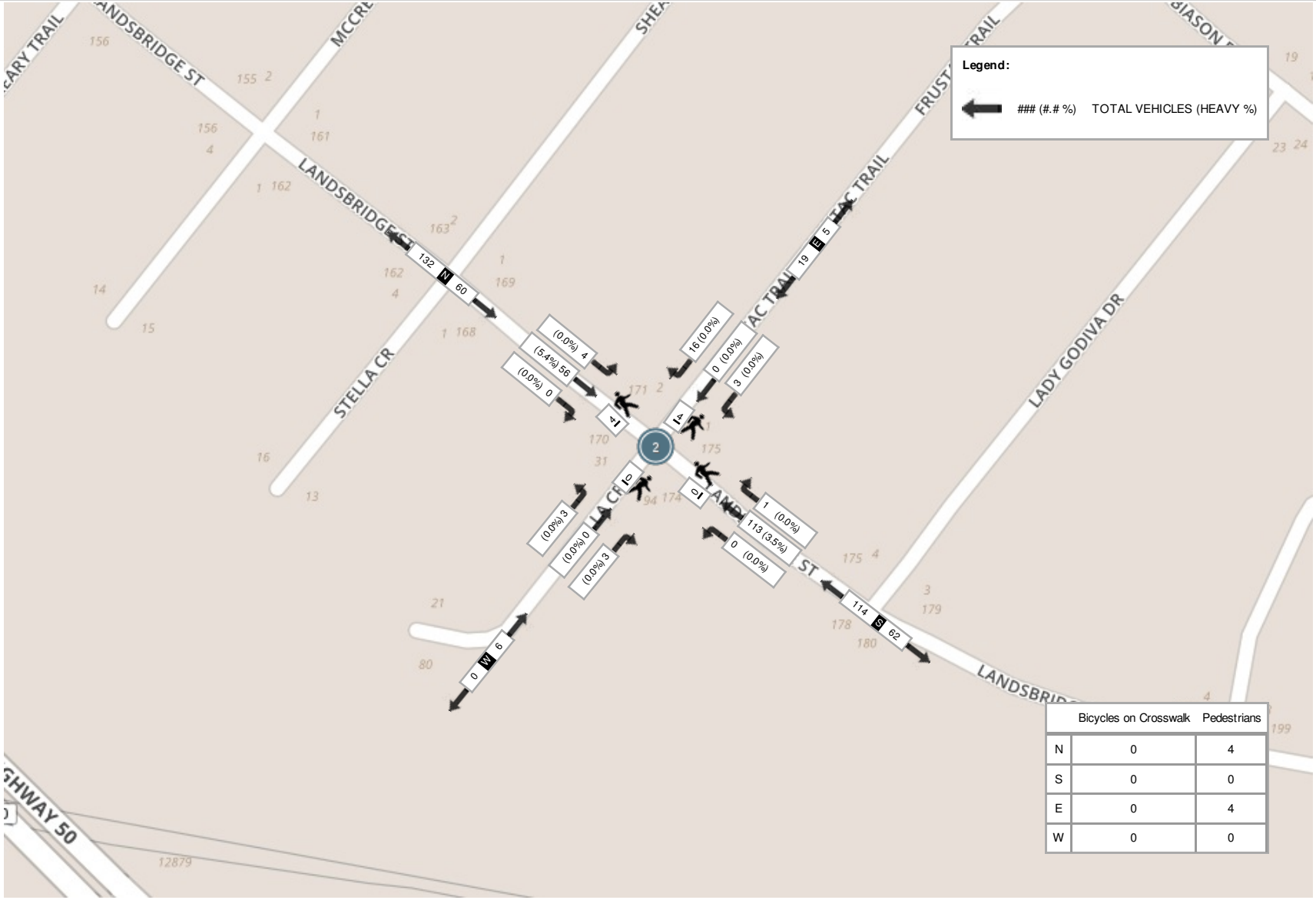
NexTrans
4261-A14 Highway 7 East
Suite 489
Markham ON, CANADA, L3R 9W6

Peak Hour: 04:45 PM - 05:45 PM

Start Time	N Approach LANDSBRIDGE STREET					E Approach FRUSTAC TRAIL					S Approach LANDSBRIDGE STREET					W Approach FRUSTAC TRAIL					Int. Total (15 min)
	Right	Thru	Left	Peds	Approach Total	Right	Thru	Left	Peds	Approach Total	Right	Thru	Left	Peds	Approach Total	Right	Thru	Left	Peds	Approach Total	
16:45:00	1	34	3	0	38	4	0	1	4	5	0	28	0	0	28	0	0	0	0	0	71
17:00:00	0	32	8	0	40	2	0	0	4	2	0	23	1	2	24	0	0	0	4	0	66
17:15:00	0	32	3	0	36	3	0	1	3	4	1	23	2	2	26	0	0	1	0	1	67
17:30:00	4	35	5	0	44	3	1	0	2	4	1	24	2	0	27	1	1	0	0	2	77
Grand Total	5	133	19	0	158	12	1	2	13	15	2	98	5	4	105	1	1	1	4	3	**281**
Approach%	3.2%	84.2%	12%		-	80%	6.7%	13.3%		-	1.9%	93.3%	4.8%		-	33.3%	33.3%	33.3%		-	-
Totals %	1.8%	47.3%	6.8%		56.2%	4.3%	0.4%	0.7%		5.3%	0.7%	34.9%	1.8%		37.4%	0.4%	0.4%	0.4%		1.1%	-
PHF	0.31	0.95	0.59		0.9	0.75	0.25	0.5		0.75	0.5	0.88	0.63		0.94	0.25	0.25	0.25		0.38	-
Heavy	0	0	0		0	0	0	0		0	0	2	0		2	0	0	0		0	-
Heavy %	0%	0%	0%		0%	0%	0%	0%		0%	0%	2%	0%		1.9%	0%	0%	0%		0%	-
Lights	5	133	19		158	12	1	2		15	2	96	5		103	1	1	1		3	-
Lights %	100%	100%	100%		100%	100%	100%	100%		100%	100%	98%	100%		98.1%	100%	100%	100%		100%	-
Single-Unit Trucks	0	0	0		0	0	0	0		0	0	2	0		2	0	0	0		0	-
Single-Unit Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0%	2%	0%		1.9%	0%	0%	0%		0%	-
Buses	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	-
Buses %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	0	-	-	-	-	10	-	-	-	-	4	-	-	-	-	4	-	-
Pedestrians%	-	-	-	0%		-	-	-	47.6%		-	-	-	19%		-	-	-	19%		-
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	3	-	-	-	-	0	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	0%		-	-	-	14.3%		-	-	-	0%		-	-	-	0%		-
Bicycles on Road	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	-
Bicycles on Road%	-	-	-	0%		-	-	-	0%		-	-	-	0%		-	-	-	0%		-

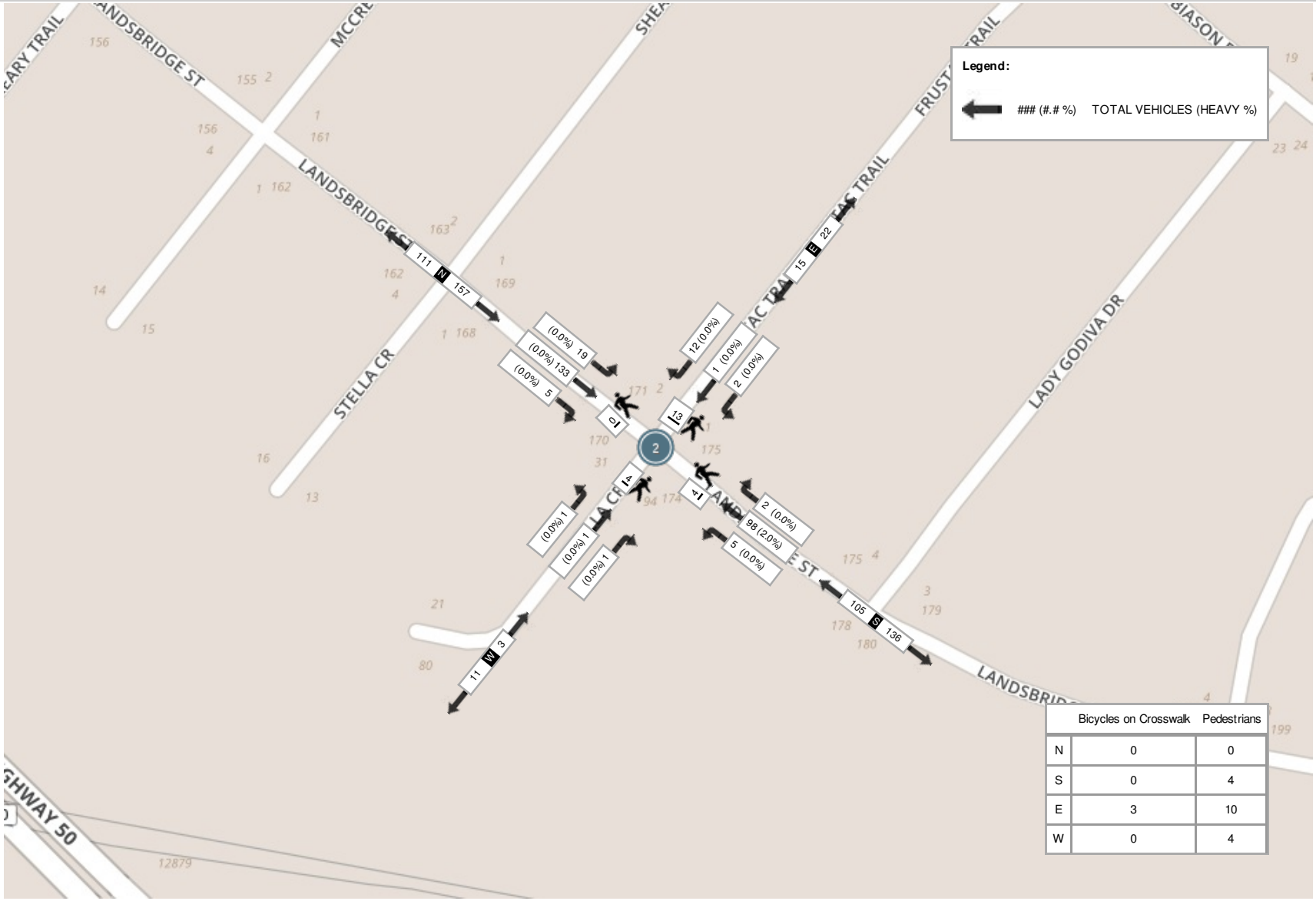
NexTrans
4261-A14 Highway 7 East
Suite 489
Markham ON, CANADA, L3R 9W6

Peak Hour: 08:00 AM - 09:00 AM



	Bicycles on Crosswalk	Pedestrians
N	0	4
S	0	0
E	0	4
W	0	0

Peak Hour: 04:45 PM - 05:45 PM



	Bicycles on Crosswalk	Pedestrians
N	0	0
S	0	4
E	3	10
W	0	4

NexTrans
4261-A14 Highway 7 East
Suite 489
Markham ON, CANADA, L3R 9W6

Turning Movement Count (1 . MCCREARY TRAIL & LANDSBRIDGE ST)

Start Time	N Approach LANDSBRIDGE ST						E Approach MCCREARY TRAIL						S Approach LANDSBRIDGE ST						W Approach QUEENSLAND CRES						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	U-Turn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	U-Turn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	U-Turn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	U-Turn W:W	Peds W:	Approach Total		
07:00:00	1	3	1	1	0	6	14	0	0	0	0	14	0	27	0	0	0	27	0	0	3	0	0	3	50	
07:15:00	0	4	1	0	0	5	9	0	0	0	1	9	0	38	0	0	0	38	0	0	1	0	0	1	53	
07:30:00	0	13	1	0	0	14	9	0	0	0	2	9	0	39	0	0	0	39	0	0	3	0	1	3	65	
07:45:00	1	12	1	0	1	14	8	0	0	0	3	8	0	27	0	0	0	27	0	0	2	0	0	2	51	219
08:00:00	3	16	1	0	0	20	7	0	0	0	4	7	0	33	0	0	4	33	0	0	3	0	3	3	63	232
08:15:00	0	21	2	0	0	23	6	0	0	0	1	6	0	36	0	0	0	36	0	0	2	0	0	2	67	246
08:30:00	1	19	4	0	0	24	14	0	0	0	0	14	0	35	0	0	0	35	2	0	3	0	0	5	78	259
08:45:00	1	19	8	0	0	28	5	0	1	0	1	6	1	42	0	0	0	43	0	0	1	0	0	1	78	286
BREAK																										
16:00:00	3	42	1	1	1	47	5	0	0	0	4	5	0	18	0	0	0	18	0	0	3	0	1	3	73	
16:15:00	3	40	13	1	0	57	5	0	0	0	2	5	1	22	1	0	0	24	0	0	0	0	0	0	86	
16:30:00	2	47	6	0	0	55	3	0	0	0	5	3	0	23	0	0	0	23	0	0	0	0	1	0	81	
16:45:00	7	53	6	0	0	66	9	0	0	0	1	9	1	37	0	0	0	38	0	0	2	0	7	2	115	355
17:00:00	1	52	12	0	0	65	1	0	0	0	3	1	0	23	0	0	0	23	0	0	1	0	0	1	90	372
17:15:00	3	53	4	0	0	60	5	0	0	0	2	5	0	24	0	0	0	24	0	0	0	0	3	0	89	375
17:30:00	0	43	9	0	0	52	3	0	0	0	2	3	0	24	0	0	0	24	1	0	0	0	0	1	80	374
17:45:00	0	51	1	0	0	52	3	0	0	0	2	3	0	25	0	0	0	25	0	0	1	0	0	1	81	340
Grand Total	26	488	71	3	2	588	106	0	1	0	33	107	3	473	1	0	4	477	3	0	25	0	16	28	**1200**	-
Approach%	4.4%	83%	12.1%	0.5%		-	99.1%	0%	0.9%	0%		-	0.6%	99.2%	0.2%	0%		-	10.7%	0%	89.3%	0%		-	**-**	-
Totals %	2.2%	40.7%	5.9%	0.3%		49%	8.8%	0%	0.1%	0%		8.9%	0.3%	39.4%	0.1%	0%		39.8%	0.3%	0%	2.1%	0%		2.3%	**-**	-
Heavy	0	14	1	0		-	1	0	0	0		-	0	8	0	0		-	0	0	0	0		-	**-**	-
Heavy %	0%	2.9%	1.4%	0%		-	0.9%	0%	0%	0%		-	0%	1.7%	0%	0%		-	0%	0%	0%	0%		-	**-**	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	**-**	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	**-**	-

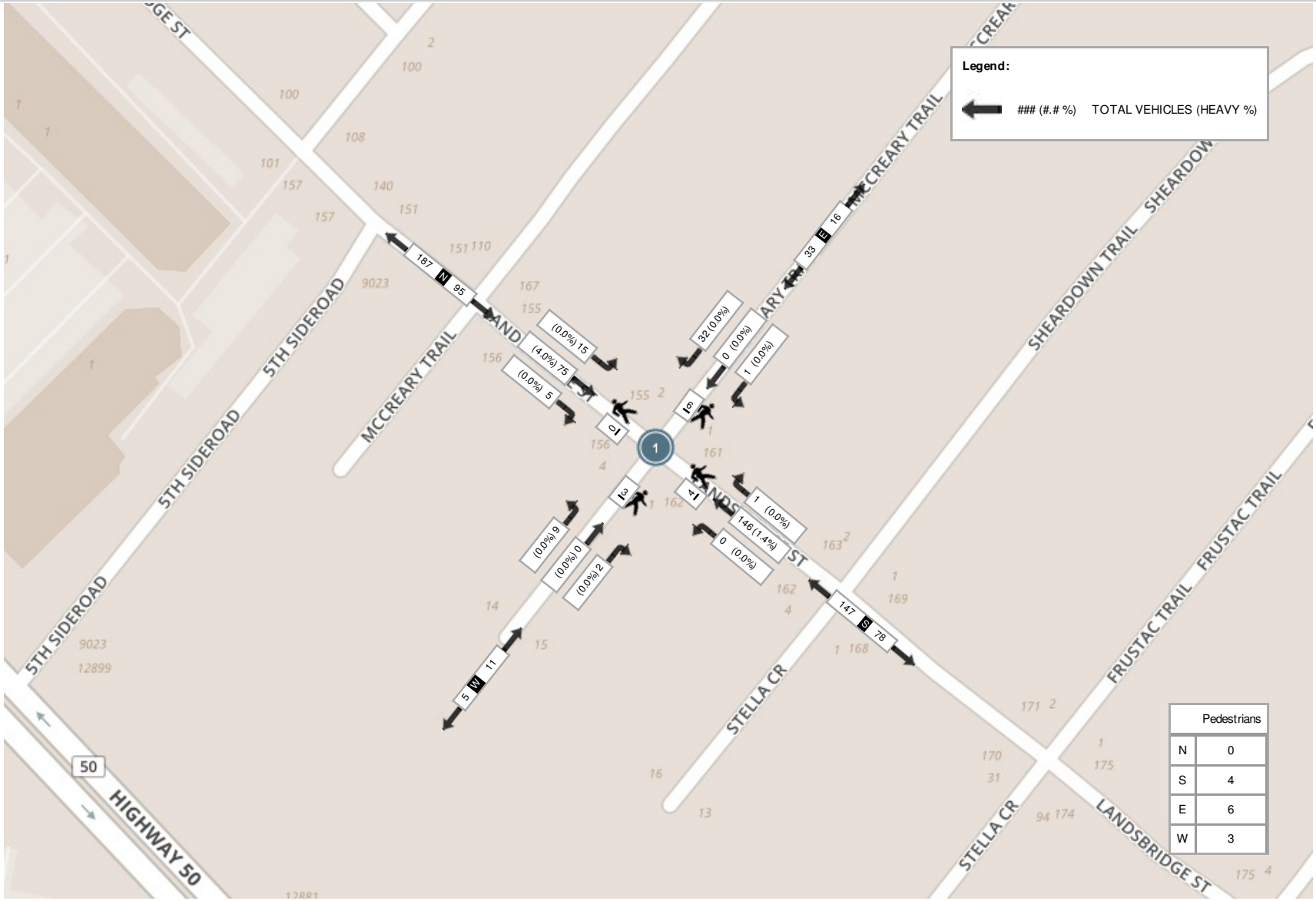
Peak Hour: 08:00 AM - 09:00 AM Weather:

Start Time	N Approach LANDSBRIDGE ST						E Approach MCCREARY TRAIL						S Approach LANDSBRIDGE ST						W Approach QUEENSLAND CRES						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
08:00:00	3	16	1	0	0	20	7	0	0	0	4	7	0	33	0	0	4	33	0	0	3	0	3	3	63
08:15:00	0	21	2	0	0	23	6	0	0	0	1	6	0	36	0	0	0	36	0	0	2	0	0	2	67
08:30:00	1	19	4	0	0	24	14	0	0	0	0	14	0	35	0	0	0	35	2	0	3	0	0	5	78
08:45:00	1	19	8	0	0	28	5	0	1	0	1	6	1	42	0	0	0	43	0	0	1	0	0	1	78
Grand Total	5	75	15	0	0	95	32	0	1	0	6	33	1	146	0	0	4	147	2	0	9	0	3	11	**286**
Approach%	5.3%	78.9%	15.8%	0%		-	97%	0%	3%	0%		-	0.7%	99.3%	0%	0%		-	18.2%	0%	81.8%	0%		-	-
Totals %	1.7%	26.2%	5.2%	0%		33.2%	11.2%	0%	0.3%	0%		11.5%	0.3%	51%	0%	0%		51.4%	0.7%	0%	3.1%	0%		3.8%	-
PHF	0.42	0.89	0.47	0		0.85	0.57	0	0.25	0		0.59	0.25	0.87	0	0		0.85	0.25	0	0.75	0		0.55	-
Heavy	0	3	0	0		3	0	0	0	0		0	0	2	0	0		2	0	0	0	0		0	-
Heavy %	0%	4%	0%	0%		3.2%	0%	0%	0%	0%		0%	0%	1.4%	0%	0%		1.4%	0%	0%	0%	0%		0%	-
Lights	5	72	15	0		92	32	0	1	0		33	1	144	0	0		145	2	0	9	0		11	-
Lights %	100%	96%	100%	0%		96.8%	100%	0%	100%	0%		100%	100%	98.6%	0%	0%		98.6%	100%	0%	100%	0%		100%	-
Single-Unit Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Buses	0	3	0	0		3	0	0	0	0		0	0	2	0	0		2	0	0	0	0		0	-
Buses %	0%	4%	0%	0%		3.2%	0%	0%	0%	0%		0%	0%	1.4%	0%	0%		1.4%	0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	6	-	-	-	-	-	4	-	-	-	-	-	3	-	-
Pedestrians%	-	-	-	-	0%		-	-	-	-	46.2%		-	-	-	-	30.8%		-	-	-	-	23.1%		-

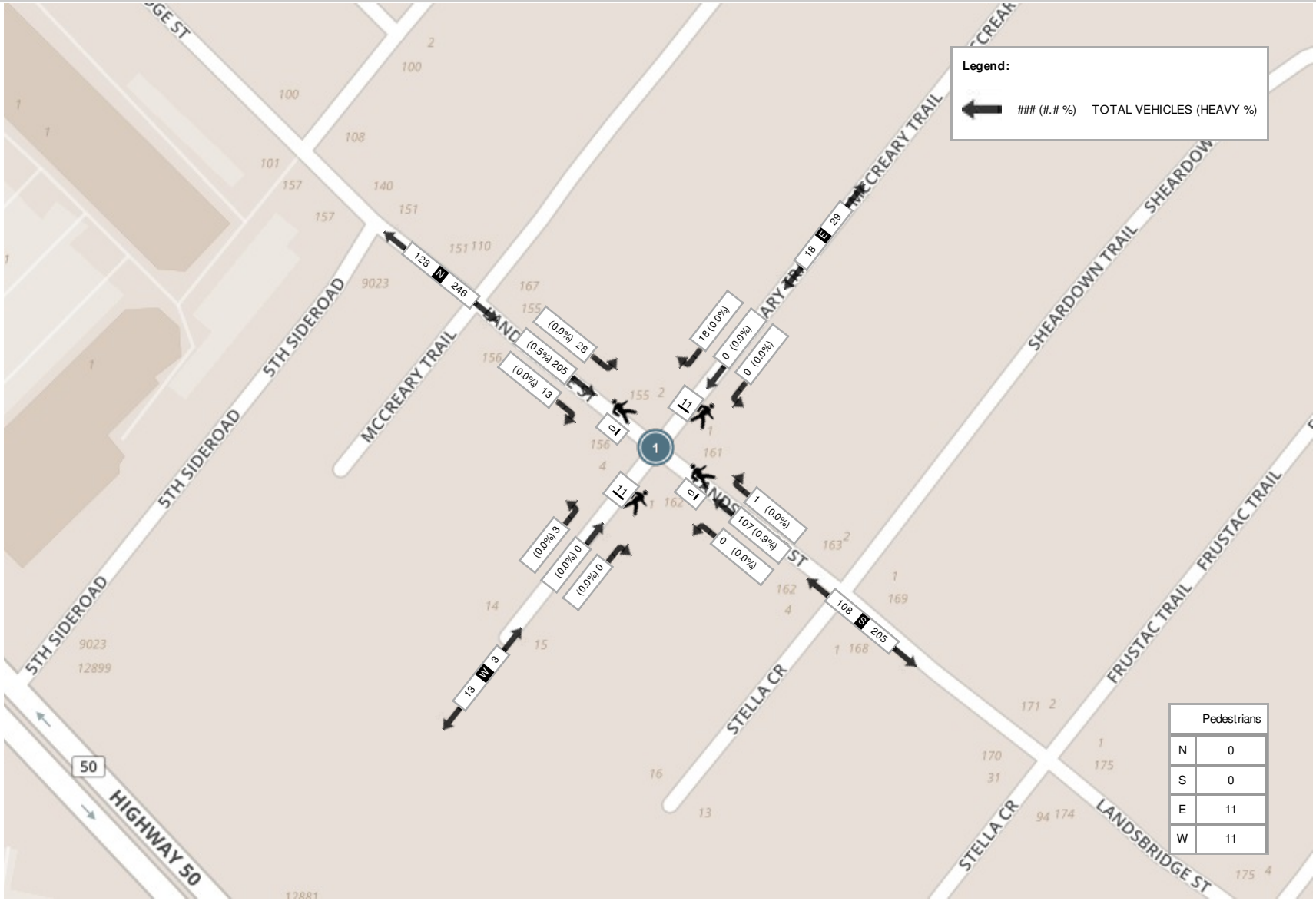
Peak Hour: 04:30 PM - 05:30 PM Weather:

Start Time	N Approach LANDSBRIDGE ST						E Approach MCCREARY TRAIL						S Approach LANDSBRIDGE ST						W Approach QUEENSLAND CRES						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
16:30:00	2	47	6	0	0	55	3	0	0	0	5	3	0	23	0	0	0	23	0	0	0	0	1	0	81
16:45:00	7	53	6	0	0	66	9	0	0	0	1	9	1	37	0	0	0	38	0	0	2	0	7	2	115
17:00:00	1	52	12	0	0	65	1	0	0	0	3	1	0	23	0	0	0	23	0	0	1	0	0	1	90
17:15:00	3	53	4	0	0	60	5	0	0	0	2	5	0	24	0	0	0	24	0	0	0	0	3	0	89
Grand Total	13	205	28	0	0	246	18	0	0	0	11	18	1	107	0	0	0	108	0	0	3	0	11	3	**375**
Approach%	5.3%	83.3%	11.4%	0%		-	100%	0%	0%	0%		-	0.9%	99.1%	0%	0%		-	0%	0%	100%	0%		-	**-**
Totals %	3.5%	54.7%	7.5%	0%		65.6%	4.8%	0%	0%	0%		4.8%	0.3%	28.5%	0%	0%		28.8%	0%	0%	0.8%	0%		0.8%	**-**
PHF	0.46	0.97	0.58	0		0.93	0.5	0	0	0		0.5	0.25	0.72	0	0		0.71	0	0	0.38	0		0.38	**-**
Heavy	0	1	0	0		1	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	**-**
Heavy %	0%	0.5%	0%	0%		0.4%	0%	0%	0%	0%		0%	0%	0.9%	0%	0%		0.9%	0%	0%	0%	0%		0%	**-**
Lights	13	204	28	0		245	18	0	0	0		18	1	106	0	0		107	0	0	3	0		3	**-**
Lights %	100%	99.5%	100%	0%		99.6%	100%	0%	0%	0%		100%	100%	99.1%	0%	0%		99.1%	0%	0%	100%	0%		100%	**-**
Single-Unit Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	**-**
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	**-**
Buses	0	1	0	0		1	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	**-**
Buses %	0%	0.5%	0%	0%		0.4%	0%	0%	0%	0%		0%	0%	0.9%	0%	0%		0.9%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	0	-	-	-	-	-	11	-	-	-	-	-	0	-	-	-	-	-	11	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	50%		-	-	-	-	0%		-	-	-	-	50%		**-**

Peak Hour: 08:00 AM - 09:00 AM **Weather:**



Peak Hour: 04:30 PM - 05:30 PM **Weather:**



Spectrum

Turning Movement Count
Location Name: SHEARDOWN TRAIL & LANDSBRIDGE ST
Date: Wed, Dec 07, 2016 Deployment Lead: Theo Daglis

NexTrans
4261-A14 Highway 7 East
Suite 489
Markham ON, CANADA, L3R 9W6

Turning Movement Count (2 . SHEARDOWN TRAIL & LANDSBRIDGE ST)

Start Time	N Approach LANDSBRIDGE ST						E Approach SHEARDOWN TRAIL						S Approach LANDSBRIDGE ST						W Approach STELLA CRES						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	U-Turn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	U-Turn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	U-Turn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	U-Turn W:W	Peds W:	Approach Total		
07:00:00	0	3	0	0	0	3	4	0	1	0	0	5	0	24	0	0	0	24	1	0	0	0	0	1	33	
07:15:00	0	4	1	0	0	5	6	0	0	0	2	6	0	32	0	0	0	32	0	0	0	0	0	0	43	
07:30:00	1	10	1	0	0	12	6	0	0	0	2	6	0	32	0	0	0	32	0	0	0	0	0	0	50	
07:45:00	0	11	2	0	0	13	5	0	0	0	0	5	0	23	0	0	0	23	0	0	1	0	0	1	42	168
08:00:00	0	14	3	1	0	18	10	0	1	0	0	11	0	21	0	0	0	21	0	0	0	0	0	0	50	185
08:15:00	0	16	3	0	0	19	8	0	0	0	4	8	1	26	0	1	0	28	0	0	1	0	0	1	56	198
08:30:00	1	18	2	0	2	21	6	0	1	0	1	7	0	32	0	0	0	32	0	1	0	0	0	1	61	209
08:45:00	0	21	2	0	0	23	7	0	0	0	3	7	0	31	2	0	0	33	1	0	1	0	0	2	65	232
BREAK																										
16:00:00	0	32	8	1	0	41	2	0	0	0	1	2	0	17	0	0	0	17	0	0	0	0	1	0	60	
16:15:00	1	31	7	0	0	39	4	0	1	0	5	5	2	18	0	0	0	20	0	0	0	0	0	0	64	
16:30:00	1	37	10	0	0	48	2	0	0	0	2	2	1	23	1	0	0	25	0	0	1	0	2	1	76	
16:45:00	4	38	11	0	0	53	3	0	0	0	2	3	1	32	0	0	0	33	0	0	2	0	5	2	91	291
17:00:00	0	42	4	1	2	47	5	0	0	0	4	5	0	17	1	0	1	18	0	0	0	0	2	0	70	301
17:15:00	1	48	6	0	0	55	4	0	0	0	2	4	0	22	0	0	0	22	0	0	0	0	1	0	81	318
17:30:00	1	41	1	1	0	44	1	0	0	0	0	1	0	19	1	0	0	20	0	0	0	0	0	0	65	307
17:45:00	1	43	5	0	0	49	7	0	0	0	0	7	1	21	1	0	0	23	1	0	1	0	0	2	81	297
Grand Total	11	409	66	4	4	490	80	0	4	0	28	84	6	390	6	1	1	403	3	1	7	0	11	11	**988**	-
Approach%	2.2%	83.5%	13.5%	0.8%		-	95.2%	0%	4.8%	0%		-	1.5%	96.8%	1.5%	0.2%		-	27.3%	9.1%	63.6%	0%		-	-	-
Totals %	1.1%	41.4%	6.7%	0.4%		49.6%	8.1%	0%	0.4%	0%		8.5%	0.6%	39.5%	0.6%	0.1%		40.8%	0.3%	0.1%	0.7%	0%		1.1%	-	-
Heavy	0	12	2	0		-	3	0	0	0		-	0	6	0	0		-	0	0	0	0		-	-	-
Heavy %	0%	2.9%	3%	0%		-	3.8%	0%	0%	0%		-	0%	1.5%	0%	0%		-	0%	0%	0%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

NexTrans
4261-A14 Highway 7 East
Suite 489
Markham ON, CANADA, L3R 9W6

Peak Hour: 08:00 AM - 09:00 AM Weather:

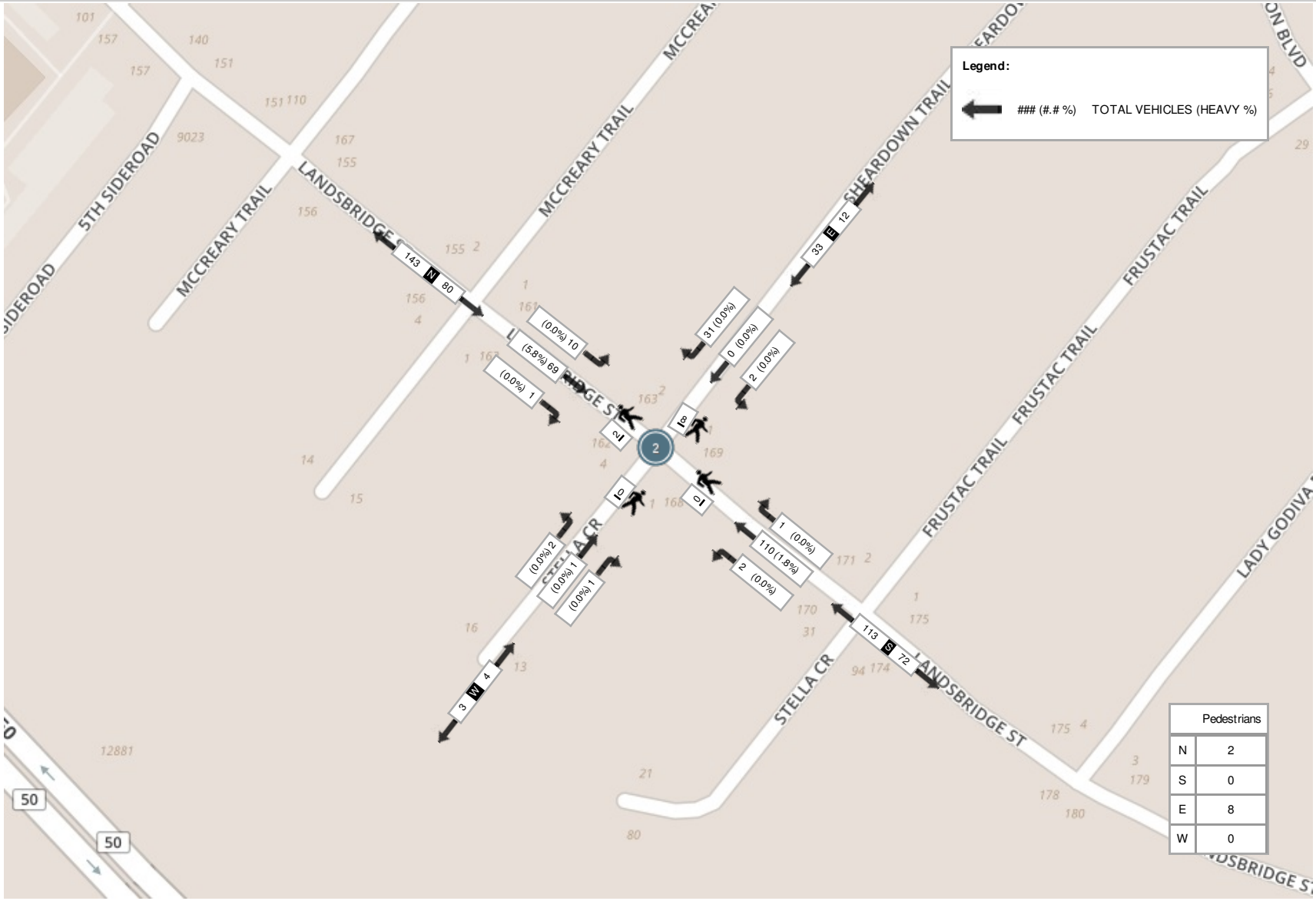
Start Time	N Approach LANDSBRIDGE ST						E Approach SHEARDOWN TRAIL						S Approach LANDSBRIDGE ST						W Approach STELLA CRES						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
08:00:00	0	14	3	1	0	18	10	0	1	0	0	11	0	21	0	0	0	21	0	0	0	0	0	0	50
08:15:00	0	16	3	0	0	19	8	0	0	0	4	8	1	26	0	1	0	28	0	0	1	0	0	1	56
08:30:00	1	18	2	0	2	21	6	0	1	0	1	7	0	32	0	0	0	32	0	1	0	0	0	1	61
08:45:00	0	21	2	0	0	23	7	0	0	0	3	7	0	31	2	0	0	33	1	0	1	0	0	2	65
Grand Total	1	69	10	1	2	81	31	0	2	0	8	33	1	110	2	1	0	114	1	1	2	0	0	4	**232**
Approach%	1.2%	85.2%	12.3%	1.2%		-	93.9%	0%	6.1%	0%		-	0.9%	96.5%	1.8%	0.9%		-	25%	25%	50%	0%		-	**-**
Totals %	0.4%	29.7%	4.3%	0.4%		34.9%	13.4%	0%	0.9%	0%		14.2%	0.4%	47.4%	0.9%	0.4%		49.1%	0.4%	0.4%	0.9%	0%		1.7%	**-**
PHF	0.25	0.82	0.83	0.25		0.88	0.78	0	0.5	0		0.75	0.25	0.86	0.25	0.25		0.86	0.25	0.25	0.5	0		0.5	**-**
Heavy	0	4	0	0		4	0	0	0	0		0	0	2	0	0		2	0	0	0	0		0	**-**
Heavy %	0%	5.8%	0%	0%		4.9%	0%	0%	0%	0%		0%	0%	1.8%	0%	0%		1.8%	0%	0%	0%	0%		0%	**-**
Lights	1	65	10	1		77	31	0	2	0		33	1	108	2	1		112	1	1	2	0		4	**-**
Lights %	100%	94.2%	100%	100%		95.1%	100%	0%	100%	0%		100%	100%	98.2%	100%	100%		98.2%	100%	100%	100%	0%		100%	**-**
Single-Unit Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	**-**
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	**-**
Buses	0	4	0	0		4	0	0	0	0		0	0	2	0	0		2	0	0	0	0		0	**-**
Buses %	0%	5.8%	0%	0%		4.9%	0%	0%	0%	0%		0%	0%	1.8%	0%	0%		1.8%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	2	-	-	-	-	-	8	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	20%		-	-	-	-	80%		-	-	-	-	0%		-	-	-	-	0%		**-**

NexTrans
4261-A14 Highway 7 East
Suite 489
Markham ON, CANADA, L3R 9W6

Peak Hour: 04:30 PM - 05:30 PM Weather:

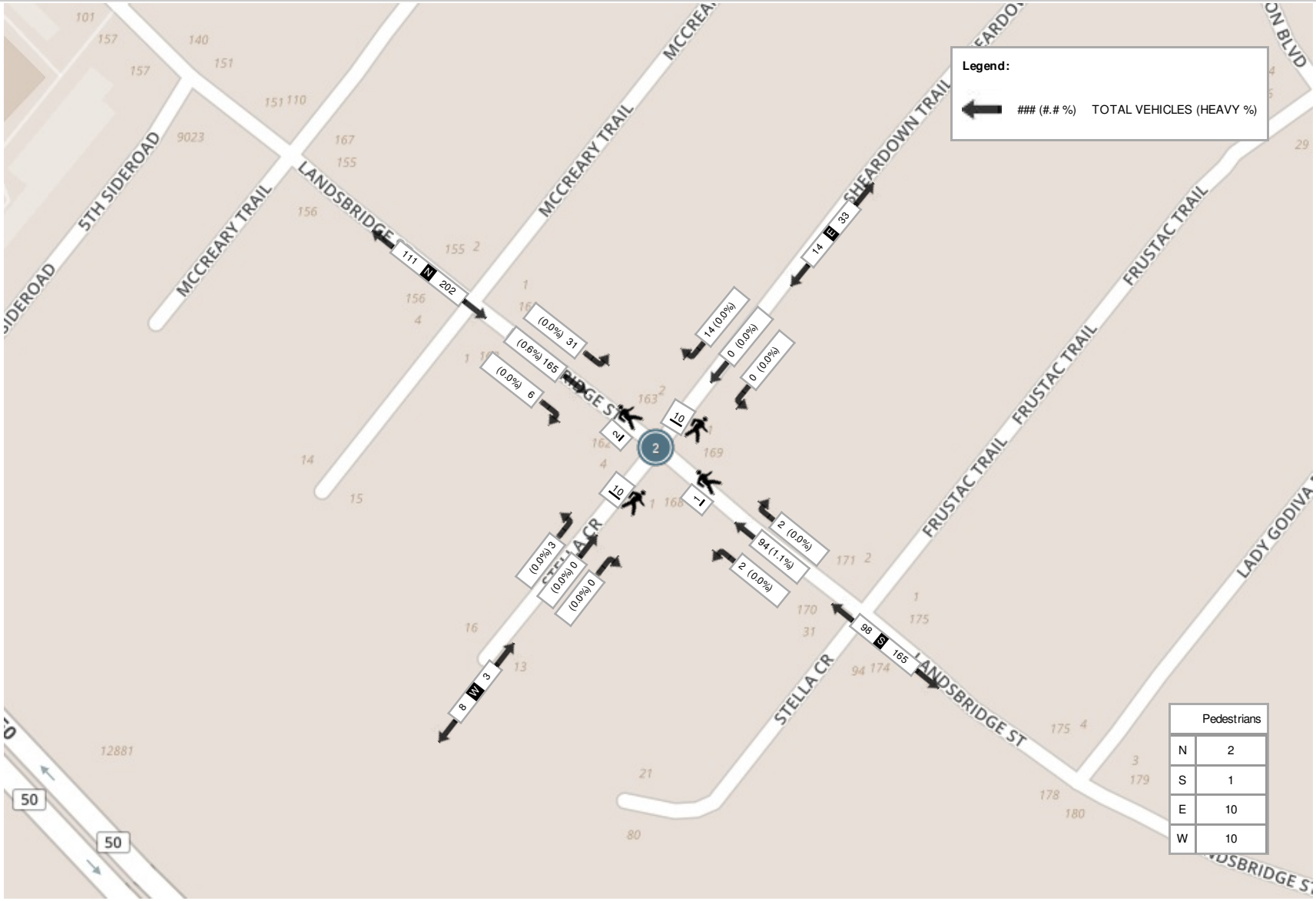
Start Time	N Approach LANDSBRIDGE ST						E Approach SHEARDOWN TRAIL						S Approach LANDSBRIDGE ST						W Approach STELLA CRES						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
16:30:00	1	37	10	0	0	48	2	0	0	0	2	2	1	23	1	0	0	25	0	0	1	0	2	1	76
16:45:00	4	38	11	0	0	53	3	0	0	0	2	3	1	32	0	0	0	33	0	0	2	0	5	2	91
17:00:00	0	42	4	1	2	47	5	0	0	0	4	5	0	17	1	0	1	18	0	0	0	0	2	0	70
17:15:00	1	48	6	0	0	55	4	0	0	0	2	4	0	22	0	0	0	22	0	0	0	0	1	0	81
Grand Total	6	165	31	1	2	203	14	0	0	0	10	14	2	94	2	0	1	98	0	0	3	0	10	3	**318**
Approach%	3%	81.3%	15.3%	0.5%		-	100%	0%	0%	0%		-	2%	95.9%	2%	0%		-	0%	0%	100%	0%		-	-
Totals %	1.9%	51.9%	9.7%	0.3%		63.8%	4.4%	0%	0%	0%		4.4%	0.6%	29.6%	0.6%	0%		30.8%	0%	0%	0.9%	0%		0.9%	-
PHF	0.38	0.86	0.7	0.25		0.92	0.7	0	0	0		0.7	0.5	0.73	0.5	0		0.74	0	0	0.38	0		0.38	-
Heavy	0	1	0	0		1	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	-
Heavy %	0%	0.6%	0%	0%		0.5%	0%	0%	0%	0%		0%	0%	1.1%	0%	0%		1%	0%	0%	0%	0%		0%	-
Lights	6	164	31	1		202	14	0	0	0		14	2	93	2	0		97	0	0	3	0		3	-
Lights %	100%	99.4%	100%	100%		99.5%	100%	0%	0%	0%		100%	100%	98.9%	100%	0%		99%	0%	0%	100%	0%		100%	-
Single-Unit Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Buses	0	1	0	0		1	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	-
Buses %	0%	0.6%	0%	0%		0.5%	0%	0%	0%	0%		0%	0%	1.1%	0%	0%		1%	0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	-	2	-	-	-	-	-	10	-	-	-	-	-	1	-	-	-	-	-	10	-	-
Pedestrians%	-	-	-	-	8.7%		-	-	-	-	43.5%		-	-	-	-	4.3%		-	-	-	-	43.5%		-

Peak Hour: 08:00 AM - 09:00 AM **Weather:**

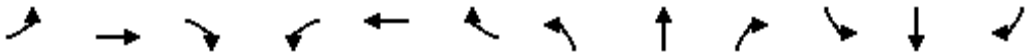


NexTrans
4261-A14 Highway 7 East
Suite 489
Markham ON, CANADA, L3R 9W6

Peak Hour: 04:30 PM - 05:30 PM **Weather:**



Appendix C - Existing Traffic Level of Service Calculations



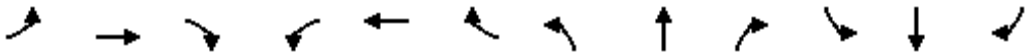
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	81	41	9	333	16	179	52	36	15	20	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		7.4	7.4		7.4	7.4	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	0.99		1.00	0.94		1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1626	3307		1624	3510		1752	1738		1591	1556	
Flt Permitted	0.42	1.00		0.64	1.00		0.68	1.00		0.65	1.00	
Satd. Flow (perm)	711	3307		1101	3510		1254	1738		1090	1556	
Peak-hour factor, PHF	0.64	0.68	0.79	0.45	0.79	0.57	0.84	0.50	0.56	0.63	0.71	0.78
Adj. Flow (vph)	28	119	52	20	422	28	213	104	64	24	28	92
RTOR Reduction (vph)	0	42	0	0	7	0	0	20	0	0	37	0
Lane Group Flow (vph)	28	129	0	20	443	0	213	148	0	24	83	0
Confl. Peds. (#/hr)			1	1					7	7		
Heavy Vehicles (%)	11%	2%	7%	11%	2%	0%	3%	2%	3%	13%	15%	6%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	13.5	13.5		13.5	13.5		40.1	40.1		40.1	40.1	
Effective Green, g (s)	13.5	13.5		13.5	13.5		40.1	40.1		40.1	40.1	
Actuated g/C Ratio	0.20	0.20		0.20	0.20		0.60	0.60		0.60	0.60	
Clearance Time (s)	6.0	6.0		6.0	6.0		7.4	7.4		7.4	7.4	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	143	666		221	707		750	1040		652	931	
v/s Ratio Prot		0.04			c0.13			0.09			0.05	
v/s Ratio Perm	0.04			0.02			c0.17			0.02		
v/c Ratio	0.20	0.19		0.09	0.63		0.28	0.14		0.04	0.09	
Uniform Delay, d1	22.2	22.2		21.8	24.4		6.5	5.9		5.5	5.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	0.1		0.2	1.7		0.9	0.3		0.1	0.2	
Delay (s)	22.9	22.4		21.9	26.2		7.5	6.2		5.6	5.9	
Level of Service	C	C		C	C		A	A		A	A	
Approach Delay (s)		22.4			26.0			6.9			5.8	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	16.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	67.0	Sum of lost time (s)	13.4
Intersection Capacity Utilization	49.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	1	43	186	3	13	70
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.25	0.77	0.76	0.38	0.65	0.73
Hourly flow rate (vph)	4	56	245	8	20	96
Pedestrians	10		9			3
Lane Width (m)	3.6		3.6			3.6
Walking Speed (m/s)	1.2		1.2			1.2
Percent Blockage	1		1			0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						203
pX, platoon unblocked						
vC, conflicting volume	404	262			263	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	404	262			263	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	93			98	
cM capacity (veh/h)	588	773			1302	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	60	253	116
Volume Left	4	0	20
Volume Right	56	8	0
cSH	757	1700	1302
Volume to Capacity	0.08	0.15	0.02
Queue Length 95th (m)	2.1	0.0	0.4
Control Delay (s)	10.2	0.0	1.5
Lane LOS	B		A
Approach Delay (s)	10.2	0.0	1.5
Approach LOS	B		

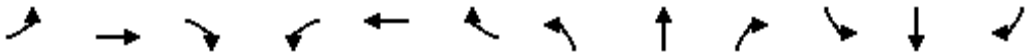
Intersection Summary			
Average Delay		1.8	
Intersection Capacity Utilization		25.7%	ICU Level of Service A
Analysis Period (min)		15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	3	0	3	3	0	16	0	113	1	4	56	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.75	0.25	0.75	0.75	0.25	0.80	0.25	0.61	0.25	0.50	0.82	0.25
Hourly flow rate (vph)	4	0	4	4	0	20	0	185	4	8	68	0
Pedestrians					4						4	
Lane Width (m)					3.6						3.6	
Walking Speed (m/s)					1.2						1.2	
Percent Blockage					0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	296	278	68	280	276	195	68			193		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	296	278	68	280	276	195	68			193		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	100	99	100	98	100			99		
cM capacity (veh/h)	638	628	1001	667	630	846	1546			1388		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	8	24	189	76
Volume Left	4	4	0	8
Volume Right	4	20	4	0
cSH	780	809	1546	1388
Volume to Capacity	0.01	0.03	0.00	0.01
Queue Length 95th (m)	0.2	0.7	0.0	0.1
Control Delay (s)	9.7	9.6	0.0	0.8
Lane LOS	A	A		A
Approach Delay (s)	9.7	9.6	0.0	0.8
Approach LOS	A	A		

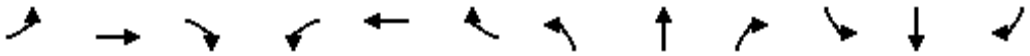
Intersection Summary				
Average Delay	1.2			
Intersection Capacity Utilization	18.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	9	0	2	1	0	32	0	146	1	15	75	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.75	0.25	0.25	0.25	0.25	0.57	0.25	0.87	0.25	0.47	0.89	0.42
Hourly flow rate (vph)	12	0	8	4	0	56	0	168	4	32	84	12
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)											279	
pX, platoon unblocked												
vC, conflicting volume	380	326	90	332	330	170	96			172		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	380	326	90	332	330	170	96			172		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	99	99	100	94	100			98		
cM capacity (veh/h)	535	582	973	610	579	879	1510			1417		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	20	60	172	128
Volume Left	12	4	0	32
Volume Right	8	56	4	12
cSH	652	854	1510	1417
Volume to Capacity	0.03	0.07	0.00	0.02
Queue Length 95th (m)	0.8	1.8	0.0	0.6
Control Delay (s)	10.7	9.5	0.0	2.0
Lane LOS	B	A		A
Approach Delay (s)	10.7	9.5	0.0	2.0
Approach LOS	B	A		

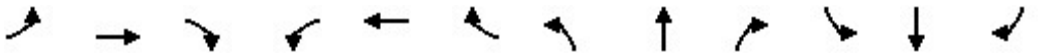
Intersection Summary				
Average Delay	2.8			
Intersection Capacity Utilization	28.3%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	2	1	1	2	0	31	2	110	1	10	69	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.50	0.25	0.25	0.50	0.25	0.78	0.25	0.86	0.25	0.83	0.82	0.25
Hourly flow rate (vph)	4	4	4	4	0	40	8	128	4	12	84	4
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)											352	
pX, platoon unblocked												
vC, conflicting volume	296	258	86	262	258	130	88			132		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	296	258	86	262	258	130	88			132		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	99	100	99	100	96	99			99		
cM capacity (veh/h)	625	641	978	682	641	925	1520			1466		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	12	44	140	100
Volume Left	4	4	8	12
Volume Right	4	40	4	4
cSH	717	896	1520	1466
Volume to Capacity	0.02	0.05	0.01	0.01
Queue Length 95th (m)	0.4	1.2	0.1	0.2
Control Delay (s)	10.1	9.2	0.5	1.0
Lane LOS	B	A	A	A
Approach Delay (s)	10.1	9.2	0.5	1.0
Approach LOS	B	A		

Intersection Summary				
Average Delay	2.3			
Intersection Capacity Utilization	19.4%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	91	439	153	24	145	49	115	58	16	67	70	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		7.4	7.4		7.4	7.4	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	0.99	1.00		0.99	1.00		0.99	1.00		0.99	1.00	
Frt	1.00	0.96		1.00	0.96		1.00	0.95		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1786	3427		1790	3426		1789	1788		1779	1763	
Flt Permitted	0.61	1.00		0.27	1.00		0.64	1.00		0.69	1.00	
Satd. Flow (perm)	1138	3427		508	3426		1200	1788		1287	1763	
Peak-hour factor, PHF	0.81	0.95	0.91	0.60	0.81	0.88	0.74	0.81	0.44	0.88	0.63	0.85
Adj. Flow (vph)	112	462	168	40	179	56	155	72	36	76	111	80
RTOR Reduction (vph)	0	52	0	0	42	0	0	16	0	0	25	0
Lane Group Flow (vph)	112	578	0	40	193	0	155	92	0	76	166	0
Confl. Peds. (#/hr)	10		15	15		10	15		22	22		15
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	17.5	17.5		17.5	17.5		40.1	40.1		40.1	40.1	
Effective Green, g (s)	17.5	17.5		17.5	17.5		40.1	40.1		40.1	40.1	
Actuated g/C Ratio	0.25	0.25		0.25	0.25		0.56	0.56		0.56	0.56	
Clearance Time (s)	6.0	6.0		6.0	6.0		7.4	7.4		7.4	7.4	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	280	844		125	844		677	1009		726	995	
v/s Ratio Prot		c0.17			0.06			0.05			0.09	
v/s Ratio Perm	0.10			0.08			c0.13			0.06		
v/c Ratio	0.40	0.68		0.32	0.23		0.23	0.09		0.10	0.17	
Uniform Delay, d1	22.4	24.3		21.9	21.4		7.7	7.1		7.1	7.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.9	2.3		1.5	0.1		0.8	0.2		0.3	0.4	
Delay (s)	23.3	26.6		23.4	21.5		8.5	7.3		7.4	7.8	
Level of Service	C	C		C	C		A	A		A	A	
Approach Delay (s)		26.1			21.8			8.0			7.7	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	19.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	71.0	Sum of lost time (s)	13.4
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	20	147	2	46	242
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.25	0.50	0.84	0.50	0.72	0.95
Hourly flow rate (vph)	0	40	175	4	64	255
Pedestrians	21					7
Lane Width (m)	3.6					3.6
Walking Speed (m/s)	1.2					1.2
Percent Blockage	2					1
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						197
pX, platoon unblocked						
vC, conflicting volume	581	205			200	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	581	205			200	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	95			95	
cM capacity (veh/h)	449	821			1360	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	40	179	319
Volume Left	0	0	64
Volume Right	40	4	0
cSH	821	1700	1360
Volume to Capacity	0.05	0.11	0.05
Queue Length 95th (m)	1.2	0.0	1.2
Control Delay (s)	9.6	0.0	1.9
Lane LOS	A		A
Approach Delay (s)	9.6	0.0	1.9
Approach LOS	A		

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	41.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	1	1	2	1	12	5	98	2	19	133	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.25	0.25	0.50	0.25	0.75	0.63	0.88	0.50	0.59	0.95	0.31
Hourly flow rate (vph)	4	4	4	4	4	16	8	111	4	32	140	16
Pedestrians		4			13			4				
Lane Width (m)		3.6			3.6			3.6				
Walking Speed (m/s)		1.2			1.2			1.2				
Percent Blockage		0			1			0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	364	361	156	365	367	126	160			128		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	364	361	156	365	367	126	160			128		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	99	100	99	99	98	99			98		
cM capacity (veh/h)	562	546	889	562	542	919	1427			1454		

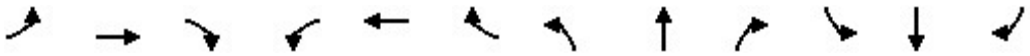
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	12	24	123	188
Volume Left	4	4	8	32
Volume Right	4	16	4	16
cSH	633	752	1427	1454
Volume to Capacity	0.02	0.03	0.01	0.02
Queue Length 95th (m)	0.5	0.8	0.1	0.5
Control Delay (s)	10.8	9.9	0.5	1.4
Lane LOS	B	A	A	A
Approach Delay (s)	10.8	9.9	0.5	1.4
Approach LOS	B	A		

Intersection Summary				
Average Delay	2.0			
Intersection Capacity Utilization	25.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	3	0	0	0	0	18	0	107	1	28	205	13
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.38	0.25	0.25	0.25	0.25	0.50	0.25	0.72	0.25	0.58	0.97	0.46
Hourly flow rate (vph)	8	0	0	0	0	36	0	149	4	48	211	28
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)											276	
pX, platoon unblocked												
vC, conflicting volume	509	475	225	473	487	151	240			153		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	509	475	225	473	487	151	240			153		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	100	100	100	96	100			97		
cM capacity (veh/h)	447	475	819	492	468	901	1339			1440		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	8	36	153	288
Volume Left	8	0	0	48
Volume Right	0	36	4	28
cSH	447	901	1339	1440
Volume to Capacity	0.02	0.04	0.00	0.03
Queue Length 95th (m)	0.4	1.0	0.0	0.8
Control Delay (s)	13.2	9.2	0.0	1.5
Lane LOS	B	A		A
Approach Delay (s)	13.2	9.2	0.0	1.5
Approach LOS	B	A		

Intersection Summary				
Average Delay	1.8			
Intersection Capacity Utilization	29.8%	ICU Level of Service	A	
Analysis Period (min)	15			

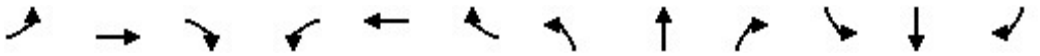


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	3	0	0	0	0	14	2	94	2	31	165	6
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.38	0.25	0.25	0.25	0.25	0.70	0.50	0.73	0.50	0.70	0.86	0.38
Hourly flow rate (vph)	8	0	0	0	0	20	4	129	4	44	192	16
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)											350	
pX, platoon unblocked												
vC, conflicting volume	447	429	200	427	435	131	208			133		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	447	429	200	427	435	131	208			133		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	100	100	100	98	100			97		
cM capacity (veh/h)	501	504	846	528	500	924	1375			1465		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	8	20	137	252
Volume Left	8	0	4	44
Volume Right	0	20	4	16
cSH	501	924	1375	1465
Volume to Capacity	0.02	0.02	0.00	0.03
Queue Length 95th (m)	0.4	0.5	0.1	0.7
Control Delay (s)	12.3	9.0	0.2	1.5
Lane LOS	B	A	A	A
Approach Delay (s)	12.3	9.0	0.2	1.5
Approach LOS	B	A		

Intersection Summary				
Average Delay	1.7			
Intersection Capacity Utilization	27.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Appendix D - Future (2021) Background Traffic Level of Service Calculations



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	89	41	9	366	16	179	57	36	15	22	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		7.4	7.4		7.4	7.4	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.99		1.00	0.95		1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1626	3322		1624	3513		1752	1745		1591	1558	
Flt Permitted	0.38	1.00		0.64	1.00		0.68	1.00		0.64	1.00	
Satd. Flow (perm)	645	3322		1088	3513		1251	1745		1080	1558	
Peak-hour factor, PHF	0.64	0.68	0.79	0.45	0.79	0.57	0.84	0.50	0.56	0.63	0.71	0.78
Adj. Flow (vph)	28	131	52	20	463	28	213	114	64	24	31	92
RTOR Reduction (vph)	0	41	0	0	6	0	0	19	0	0	38	0
Lane Group Flow (vph)	28	142	0	20	485	0	213	159	0	24	85	0
Confl. Peds. (#/hr)			1	1					7	7		
Heavy Vehicles (%)	11%	2%	7%	11%	2%	0%	3%	2%	3%	13%	15%	6%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	14.6	14.6		14.6	14.6		40.1	40.1		40.1	40.1	
Effective Green, g (s)	14.6	14.6		14.6	14.6		40.1	40.1		40.1	40.1	
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.59	0.59		0.59	0.59	
Clearance Time (s)	6.0	6.0		6.0	6.0		7.4	7.4		7.4	7.4	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	138	712		233	753		736	1027		635	917	
v/s Ratio Prot		0.04			c0.14			0.09			0.05	
v/s Ratio Perm	0.04			0.02			c0.17			0.02		
v/c Ratio	0.20	0.20		0.09	0.64		0.29	0.15		0.04	0.09	
Uniform Delay, d1	22.0	22.0		21.4	24.4		6.9	6.3		5.9	6.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	0.1		0.2	1.9		1.0	0.3		0.1	0.2	
Delay (s)	22.7	22.1		21.6	26.3		7.9	6.7		6.0	6.3	
Level of Service	C	C		C	C		A	A		A	A	
Approach Delay (s)		22.2			26.1			7.4			6.2	
Approach LOS		C			C			A			A	

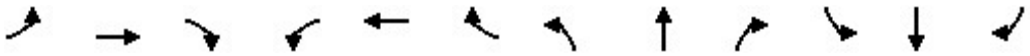
Intersection Summary			
HCM 2000 Control Delay	17.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	68.1	Sum of lost time (s)	13.4
Intersection Capacity Utilization	49.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	1	43	205	3	13	77
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.25	0.77	0.76	0.38	0.65	0.73
Hourly flow rate (vph)	4	56	270	8	20	105
Pedestrians	10		9			3
Lane Width (m)	3.6		3.6			3.6
Walking Speed (m/s)	1.2		1.2			1.2
Percent Blockage	1		1			0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						203
pX, platoon unblocked						
vC, conflicting volume	438	287			288	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	438	287			288	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	93			98	
cM capacity (veh/h)	562	749			1275	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	60	278	125
Volume Left	4	0	20
Volume Right	56	8	0
cSH	733	1700	1275
Volume to Capacity	0.08	0.16	0.02
Queue Length 95th (m)	2.1	0.0	0.4
Control Delay (s)	10.4	0.0	1.4
Lane LOS	B		A
Approach Delay (s)	10.4	0.0	1.4
Approach LOS	B		

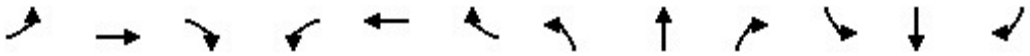
Intersection Summary			
Average Delay		1.7	
Intersection Capacity Utilization		26.0%	ICU Level of Service A
Analysis Period (min)		15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	3	0	3	3	0	16	0	124	1	4	62	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.75	0.25	0.75	0.75	0.25	0.80	0.25	0.61	0.25	0.50	0.82	0.25
Hourly flow rate (vph)	4	0	4	4	0	20	0	203	4	8	76	0
Pedestrians					4						4	
Lane Width (m)					3.6						3.6	
Walking Speed (m/s)					1.2						1.2	
Percent Blockage					0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	321	303	76	305	301	213	76			211		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	321	303	76	305	301	213	76			211		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	100	99	100	98	100			99		
cM capacity (veh/h)	614	608	991	642	609	826	1536			1367		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	8	24	207	84
Volume Left	4	4	0	8
Volume Right	4	20	4	0
cSH	758	789	1536	1367
Volume to Capacity	0.01	0.03	0.00	0.01
Queue Length 95th (m)	0.3	0.8	0.0	0.1
Control Delay (s)	9.8	9.7	0.0	0.8
Lane LOS	A	A		A
Approach Delay (s)	9.8	9.7	0.0	0.8
Approach LOS	A	A		

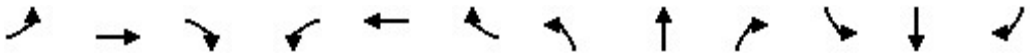
Intersection Summary				
Average Delay	1.2			
Intersection Capacity Utilization	18.7%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	9	0	2	1	0	32	0	161	1	15	83	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.75	0.25	0.25	0.25	0.25	0.57	0.25	0.87	0.25	0.47	0.89	0.42
Hourly flow rate (vph)	12	0	8	4	0	56	0	185	4	32	93	12
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)											279	
pX, platoon unblocked												
vC, conflicting volume	406	352	99	358	356	187	105			189		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	406	352	99	358	356	187	105			189		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	99	99	100	93	100			98		
cM capacity (veh/h)	513	563	962	586	560	860	1499			1397		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	20	60	189	137
Volume Left	12	4	0	32
Volume Right	8	56	4	12
cSH	631	834	1499	1397
Volume to Capacity	0.03	0.07	0.00	0.02
Queue Length 95th (m)	0.8	1.9	0.0	0.6
Control Delay (s)	10.9	9.7	0.0	1.9
Lane LOS	B	A		A
Approach Delay (s)	10.9	9.7	0.0	1.9
Approach LOS	B	A		

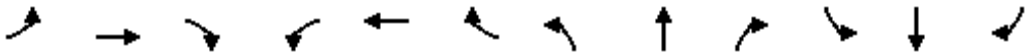
Intersection Summary				
Average Delay	2.6			
Intersection Capacity Utilization	29.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	2	1	1	2	0	31	2	121	1	10	76	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.50	0.25	0.25	0.50	0.25	0.78	0.25	0.86	0.25	0.83	0.82	0.25
Hourly flow rate (vph)	4	4	4	4	0	40	8	141	4	12	93	4
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)											352	
pX, platoon unblocked												
vC, conflicting volume	317	279	95	283	279	143	97			145		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	317	279	95	283	279	143	97			145		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	99	100	99	100	96	99			99		
cM capacity (veh/h)	605	624	968	660	624	910	1509			1450		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	12	44	153	109
Volume Left	4	4	8	12
Volume Right	4	40	4	4
cSH	699	880	1509	1450
Volume to Capacity	0.02	0.05	0.01	0.01
Queue Length 95th (m)	0.4	1.3	0.1	0.2
Control Delay (s)	10.2	9.3	0.4	0.9
Lane LOS	B	A	A	A
Approach Delay (s)	10.2	9.3	0.4	0.9
Approach LOS	B	A		

Intersection Summary				
Average Delay	2.2			
Intersection Capacity Utilization	19.9%	ICU Level of Service	A	
Analysis Period (min)	15			



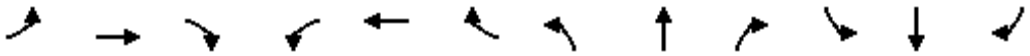
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	91	483	153	24	160	49	115	64	16	67	77	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		7.4	7.4		7.4	7.4	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	0.99	1.00		0.99	1.00		0.99	1.00		0.99	1.00	
Frt	1.00	0.96		1.00	0.97		1.00	0.95		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1786	3439		1791	3437		1789	1795		1779	1771	
Flt Permitted	0.59	1.00		0.24	1.00		0.63	1.00		0.68	1.00	
Satd. Flow (perm)	1118	3439		458	3437		1188	1795		1279	1771	
Peak-hour factor, PHF	0.81	0.95	0.91	0.60	0.81	0.88	0.74	0.81	0.44	0.88	0.63	0.85
Adj. Flow (vph)	112	508	168	40	198	56	155	79	36	76	122	80
RTOR Reduction (vph)	0	44	0	0	36	0	0	16	0	0	24	0
Lane Group Flow (vph)	112	632	0	40	218	0	155	99	0	76	178	0
Confl. Peds. (#/hr)	10		15	15		10	15		22	22		15
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	18.7	18.7		18.7	18.7		40.1	40.1		40.1	40.1	
Effective Green, g (s)	18.7	18.7		18.7	18.7		40.1	40.1		40.1	40.1	
Actuated g/C Ratio	0.26	0.26		0.26	0.26		0.56	0.56		0.56	0.56	
Clearance Time (s)	6.0	6.0		6.0	6.0		7.4	7.4		7.4	7.4	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	289	890		118	890		659	996		710	983	
v/s Ratio Prot		c0.18			0.06			0.06			0.10	
v/s Ratio Perm	0.10			0.09			c0.13			0.06		
v/c Ratio	0.39	0.71		0.34	0.25		0.24	0.10		0.11	0.18	
Uniform Delay, d1	22.0	24.3		21.7	21.2		8.2	7.6		7.6	7.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.9	2.6		1.7	0.1		0.8	0.2		0.3	0.4	
Delay (s)	22.9	26.9		23.4	21.3		9.0	7.8		7.9	8.3	
Level of Service	C	C		C	C		A	A		A	A	
Approach Delay (s)		26.3			21.6			8.5			8.2	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	19.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	72.2	Sum of lost time (s)	13.4
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	20	162	2	46	266
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.25	0.50	0.84	0.50	0.72	0.95
Hourly flow rate (vph)	0	40	193	4	64	280
Pedestrians	21					7
Lane Width (m)	3.6					3.6
Walking Speed (m/s)	1.2					1.2
Percent Blockage	2					1
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						197
pX, platoon unblocked						
vC, conflicting volume	624	223			218	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	624	223			218	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	95			95	
cM capacity (veh/h)	424	803			1340	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	40	197	344
Volume Left	0	0	64
Volume Right	40	4	0
cSH	803	1700	1340
Volume to Capacity	0.05	0.12	0.05
Queue Length 95th (m)	1.3	0.0	1.2
Control Delay (s)	9.7	0.0	1.8
Lane LOS	A		A
Approach Delay (s)	9.7	0.0	1.8
Approach LOS	A		

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	43.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	1	1	2	1	12	5	108	2	19	146	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.25	0.25	0.50	0.25	0.75	0.63	0.88	0.50	0.59	0.95	0.31
Hourly flow rate (vph)	4	4	4	4	4	16	8	123	4	32	154	16
Pedestrians		4			13			4				
Lane Width (m)		3.6			3.6			3.6				
Walking Speed (m/s)		1.2			1.2			1.2				
Percent Blockage		0			1			0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	389	386	170	390	392	138	174			140		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	389	386	170	390	392	138	174			140		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	99	100	99	99	98	99			98		
cM capacity (veh/h)	541	529	874	541	524	906	1410			1440		

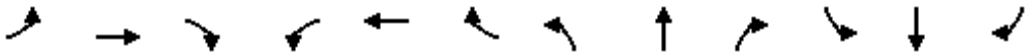
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	12	24	135	202
Volume Left	4	4	8	32
Volume Right	4	16	4	16
cSH	614	734	1410	1440
Volume to Capacity	0.02	0.03	0.01	0.02
Queue Length 95th (m)	0.5	0.8	0.1	0.5
Control Delay (s)	11.0	10.1	0.5	1.4
Lane LOS	B	B	A	A
Approach Delay (s)	11.0	10.1	0.5	1.4
Approach LOS	B	B		

Intersection Summary				
Average Delay	1.9			
Intersection Capacity Utilization	26.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	3	0	0	0	0	18	0	107	1	28	226	13
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.38	0.25	0.25	0.25	0.25	0.50	0.25	0.72	0.25	0.58	0.97	0.46
Hourly flow rate (vph)	8	0	0	0	0	36	0	149	4	48	233	28
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)											276	
pX, platoon unblocked												
vC, conflicting volume	530	496	247	494	508	151	261			153		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	530	496	247	494	508	151	261			153		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	100	100	100	96	100			97		
cM capacity (veh/h)	433	462	797	476	455	901	1315			1440		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	8	36	153	310
Volume Left	8	0	0	48
Volume Right	0	36	4	28
cSH	433	901	1315	1440
Volume to Capacity	0.02	0.04	0.00	0.03
Queue Length 95th (m)	0.4	1.0	0.0	0.8
Control Delay (s)	13.5	9.2	0.0	1.4
Lane LOS	B	A		A
Approach Delay (s)	13.5	9.2	0.0	1.4
Approach LOS	B	A		

Intersection Summary				
Average Delay	1.7			
Intersection Capacity Utilization	30.9%	ICU Level of Service	A	
Analysis Period (min)	15			

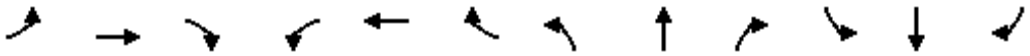


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	3	0	0	0	0	14	2	94	2	31	182	6
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.38	0.25	0.25	0.25	0.25	0.70	0.50	0.73	0.50	0.70	0.86	0.38
Hourly flow rate (vph)	8	0	0	0	0	20	4	129	4	44	212	16
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)											350	
pX, platoon unblocked												
vC, conflicting volume	467	449	220	447	455	131	227			133		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	467	449	220	447	455	131	227			133		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	100	100	100	98	100			97		
cM capacity (veh/h)	486	491	825	512	488	924	1353			1465		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	8	20	137	272
Volume Left	8	0	4	44
Volume Right	0	20	4	16
cSH	486	924	1353	1465
Volume to Capacity	0.02	0.02	0.00	0.03
Queue Length 95th (m)	0.4	0.5	0.1	0.7
Control Delay (s)	12.5	9.0	0.2	1.4
Lane LOS	B	A	A	A
Approach Delay (s)	12.5	9.0	0.2	1.4
Approach LOS	B	A		

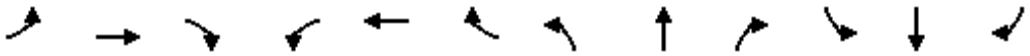
Intersection Summary				
Average Delay	1.6			
Intersection Capacity Utilization	28.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Appendix E – Future (2021) Total Traffic Level of Service Calculations



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	89	54	10	366	16	220	60	39	15	23	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		7.4	7.4		7.4	7.4	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	0.99		1.00	0.94		1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1626	3278		1624	3513		1752	1742		1591	1559	
Flt Permitted	0.38	1.00		0.63	1.00		0.68	1.00		0.64	1.00	
Satd. Flow (perm)	645	3278		1072	3513		1250	1742		1068	1559	
Peak-hour factor, PHF	0.64	0.68	0.79	0.45	0.79	0.57	0.84	0.50	0.56	0.63	0.71	0.78
Adj. Flow (vph)	28	131	68	22	463	28	262	120	70	24	32	92
RTOR Reduction (vph)	0	53	0	0	6	0	0	19	0	0	38	0
Lane Group Flow (vph)	28	146	0	22	485	0	262	171	0	24	86	0
Confl. Peds. (#/hr)			1	1					7	7		
Heavy Vehicles (%)	11%	2%	7%	11%	2%	0%	3%	2%	3%	13%	15%	6%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	14.6	14.6		14.6	14.6		40.1	40.1		40.1	40.1	
Effective Green, g (s)	14.6	14.6		14.6	14.6		40.1	40.1		40.1	40.1	
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.59	0.59		0.59	0.59	
Clearance Time (s)	6.0	6.0		6.0	6.0		7.4	7.4		7.4	7.4	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	138	702		229	753		736	1025		628	918	
v/s Ratio Prot		0.04			c0.14			0.10			0.06	
v/s Ratio Perm	0.04			0.02			c0.21			0.02		
v/c Ratio	0.20	0.21		0.10	0.64		0.36	0.17		0.04	0.09	
Uniform Delay, d1	22.0	22.0		21.5	24.4		7.3	6.4		5.9	6.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	0.1		0.2	1.9		1.3	0.4		0.1	0.2	
Delay (s)	22.7	22.1		21.6	26.3		8.6	6.7		6.0	6.3	
Level of Service	C	C		C	C		A	A		A	A	
Approach Delay (s)		22.2			26.1			7.8			6.2	
Approach LOS		C			C			A			A	

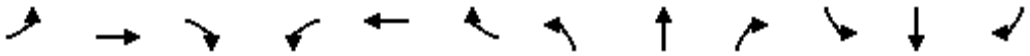
Intersection Summary			
HCM 2000 Control Delay	17.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	68.1	Sum of lost time (s)	13.4
Intersection Capacity Utilization	49.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	12	0	3	1	0	43	1	239	3	13	88	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	0	3	1	0	47	1	260	3	14	96	4
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)											203	
pX, platoon unblocked												
vC, conflicting volume	436	391	98	393	392	261	100			263		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	436	391	98	393	392	261	100			263		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	100	100	100	94	100			99		
cM capacity (veh/h)	494	538	958	560	538	777	1493			1301		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	16	48	264	114
Volume Left	13	1	1	14
Volume Right	3	47	3	4
cSH	547	770	1493	1301
Volume to Capacity	0.03	0.06	0.00	0.01
Queue Length 95th (m)	0.7	1.6	0.0	0.3
Control Delay (s)	11.8	10.0	0.0	1.0
Lane LOS	B	A	A	A
Approach Delay (s)	11.8	10.0	0.0	1.0
Approach LOS	B	A		

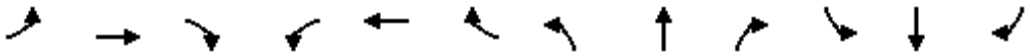
Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	29.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	14	0	6	3	0	16	1	127	1	4	71	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.75	0.25	0.75	0.75	0.25	0.80	0.25	0.61	0.25	0.50	0.82	0.25
Hourly flow rate (vph)	19	0	8	4	0	20	4	208	4	8	87	12
Pedestrians					4						4	
Lane Width (m)					3.6						3.6	
Walking Speed (m/s)					1.2						1.2	
Percent Blockage					0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	351	333	93	339	337	218	99			216		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	351	333	93	339	337	218	99			216		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	99	99	100	98	100			99		
cM capacity (veh/h)	586	583	970	606	580	821	1507			1361		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	27	24	216	107
Volume Left	19	4	4	8
Volume Right	8	20	4	12
cSH	665	775	1507	1361
Volume to Capacity	0.04	0.03	0.00	0.01
Queue Length 95th (m)	1.0	0.8	0.1	0.1
Control Delay (s)	10.6	9.8	0.2	0.6
Lane LOS	B	A	A	A
Approach Delay (s)	10.6	9.8	0.2	0.6
Approach LOS	B	A		

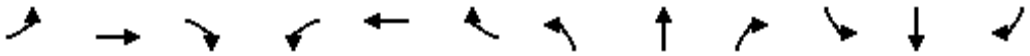
Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	19.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	21	0	5	1	0	32	1	184	1	15	93	9
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.75	0.25	0.25	0.25	0.25	0.57	0.25	0.87	0.25	0.47	0.89	0.42
Hourly flow rate (vph)	28	0	20	4	0	56	4	211	4	32	104	21
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)											279	
pX, platoon unblocked												
vC, conflicting volume	457	403	115	421	411	213	126			215		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	457	403	115	421	411	213	126			215		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	94	100	98	99	100	93	100			98		
cM capacity (veh/h)	473	526	943	525	520	832	1473			1366		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	48	60	219	158
Volume Left	28	4	4	32
Volume Right	20	56	4	21
cSH	597	800	1473	1366
Volume to Capacity	0.08	0.08	0.00	0.02
Queue Length 95th (m)	2.1	1.9	0.1	0.6
Control Delay (s)	11.6	9.9	0.2	1.7
Lane LOS	B	A	A	A
Approach Delay (s)	11.6	9.9	0.2	1.7
Approach LOS	B	A		

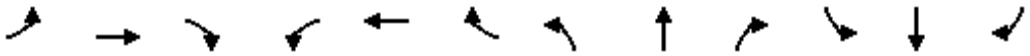
Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	31.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	13	1	4	2	0	31	3	134	1	10	85	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.50	0.25	0.25	0.50	0.25	0.78	0.25	0.86	0.25	0.83	0.82	0.25
Hourly flow rate (vph)	26	4	16	4	0	40	12	156	4	12	104	20
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)											352	
pX, platoon unblocked												
vC, conflicting volume	359	322	114	338	330	158	124			160		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	359	322	114	338	330	158	124			160		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	99	98	99	100	96	99			99		
cM capacity (veh/h)	566	589	945	599	583	893	1476			1432		

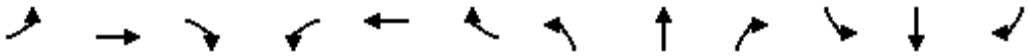
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	46	44	172	136
Volume Left	26	4	12	12
Volume Right	16	40	4	20
cSH	660	854	1476	1432
Volume to Capacity	0.07	0.05	0.01	0.01
Queue Length 95th (m)	1.8	1.3	0.2	0.2
Control Delay (s)	10.9	9.4	0.6	0.7
Lane LOS	B	A	A	A
Approach Delay (s)	10.9	9.4	0.6	0.7
Approach LOS	B	A		

Intersection Summary				
Average Delay	2.8			
Intersection Capacity Utilization	22.7%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	91	483	189	27	160	49	142	66	18	67	80	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		7.4	7.4		7.4	7.4	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	0.99	1.00		0.99	1.00		0.99	1.00		0.99	1.00	
Frt	1.00	0.96		1.00	0.97		1.00	0.95		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1786	3410		1792	3437		1789	1787		1779	1774	
Flt Permitted	0.59	1.00		0.22	1.00		0.63	1.00		0.68	1.00	
Satd. Flow (perm)	1117	3410		420	3437		1183	1787		1271	1774	
Peak-hour factor, PHF	0.81	0.95	0.91	0.60	0.81	0.88	0.74	0.81	0.44	0.88	0.63	0.85
Adj. Flow (vph)	112	508	208	45	198	56	192	81	41	76	127	80
RTOR Reduction (vph)	0	61	0	0	35	0	0	19	0	0	23	0
Lane Group Flow (vph)	112	655	0	45	219	0	192	103	0	76	184	0
Confl. Peds. (#/hr)	10		15	15		10	15		22	22		15
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	19.8	19.8		19.8	19.8		40.2	40.2		40.2	40.2	
Effective Green, g (s)	19.8	19.8		19.8	19.8		40.2	40.2		40.2	40.2	
Actuated g/C Ratio	0.27	0.27		0.27	0.27		0.55	0.55		0.55	0.55	
Clearance Time (s)	6.0	6.0		6.0	6.0		7.4	7.4		7.4	7.4	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	301	919		113	927		647	978		696	971	
v/s Ratio Prot		c0.19			0.06			0.06			0.10	
v/s Ratio Perm	0.10			0.11			c0.16			0.06		
v/c Ratio	0.37	0.71		0.40	0.24		0.30	0.11		0.11	0.19	
Uniform Delay, d1	21.8	24.2		21.9	20.9		9.0	8.0		8.0	8.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	2.6		2.3	0.1		1.2	0.2		0.3	0.4	
Delay (s)	22.5	26.9		24.2	21.0		10.1	8.2		8.3	8.8	
Level of Service	C	C		C	C		B	A		A	A	
Approach Delay (s)		26.3			21.5			9.4			8.7	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	19.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	73.4	Sum of lost time (s)	13.4
Intersection Capacity Utilization	80.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	8	0	2	0	0	20	2	184	2	46	297	11
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	0	2	0	0	22	2	200	2	50	323	12
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)											197	
pX, platoon unblocked												
vC, conflicting volume	656	635	329	636	640	201	335			202		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	656	635	329	636	640	201	335			202		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	100	100	100	97	100			96		
cM capacity (veh/h)	358	381	713	378	378	840	1225			1370		

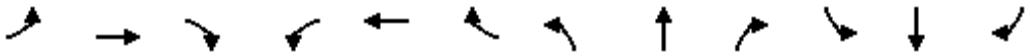
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	11	22	204	385
Volume Left	9	0	2	50
Volume Right	2	22	2	12
cSH	398	840	1225	1370
Volume to Capacity	0.03	0.03	0.00	0.04
Queue Length 95th (m)	0.7	0.6	0.0	0.9
Control Delay (s)	14.3	9.4	0.1	1.3
Lane LOS	B	A	A	A
Approach Delay (s)	14.3	9.4	0.1	1.3
Approach LOS	B	A		

Intersection Summary				
Average Delay	1.4			
Intersection Capacity Utilization	46.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	8	1	3	2	1	12	8	115	2	19	152	15
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.25	0.25	0.50	0.25	0.75	0.63	0.88	0.50	0.59	0.95	0.31
Hourly flow rate (vph)	32	4	12	4	4	16	13	131	4	32	160	48
Pedestrians		4			13			4				
Lane Width (m)		3.6			3.6			3.6				
Walking Speed (m/s)		1.2			1.2			1.2				
Percent Blockage		0			1			0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	429	426	192	438	448	146	212			148		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	429	426	192	438	448	146	212			148		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	94	99	99	99	99	98	99			98		
cM capacity (veh/h)	507	500	849	497	486	897	1365			1431		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	48	24	147	241
Volume Left	32	4	13	32
Volume Right	12	16	4	48
cSH	563	703	1365	1431
Volume to Capacity	0.09	0.03	0.01	0.02
Queue Length 95th (m)	2.2	0.8	0.2	0.6
Control Delay (s)	12.0	10.3	0.7	1.2
Lane LOS	B	B	A	A
Approach Delay (s)	12.0	10.3	0.7	1.2
Approach LOS	B	B		

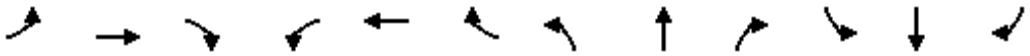
Intersection Summary				
Average Delay	2.6			
Intersection Capacity Utilization	26.1%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	11	0	2	0	0	18	2	123	1	28	248	24
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.38	0.25	0.25	0.25	0.25	0.50	0.25	0.72	0.25	0.58	0.97	0.46
Hourly flow rate (vph)	29	0	8	0	0	36	8	171	4	48	256	52
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)											276	
pX, platoon unblocked												
vC, conflicting volume	603	569	282	575	593	173	308			175		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	603	569	282	575	593	173	308			175		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	92	100	99	100	100	96	99			97		
cM capacity (veh/h)	385	417	762	414	404	876	1264			1414		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	37	36	183	356
Volume Left	29	0	8	48
Volume Right	8	36	4	52
cSH	431	876	1264	1414
Volume to Capacity	0.09	0.04	0.01	0.03
Queue Length 95th (m)	2.2	1.0	0.2	0.8
Control Delay (s)	14.1	9.3	0.4	1.3
Lane LOS	B	A	A	A
Approach Delay (s)	14.1	9.3	0.4	1.3
Approach LOS	B	A		

Intersection Summary				
Average Delay	2.3			
Intersection Capacity Utilization	40.1%	ICU Level of Service	A	
Analysis Period (min)	15			

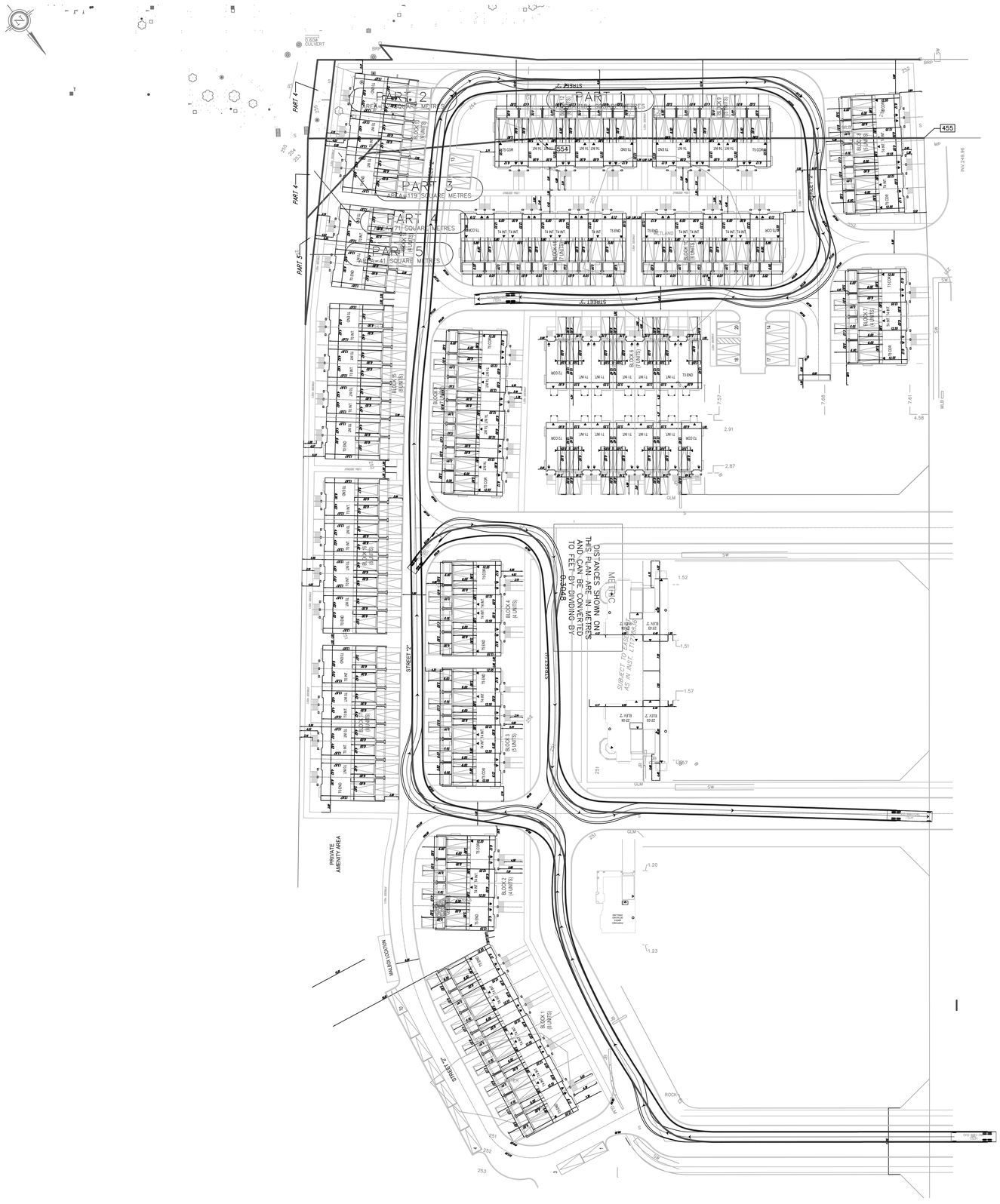


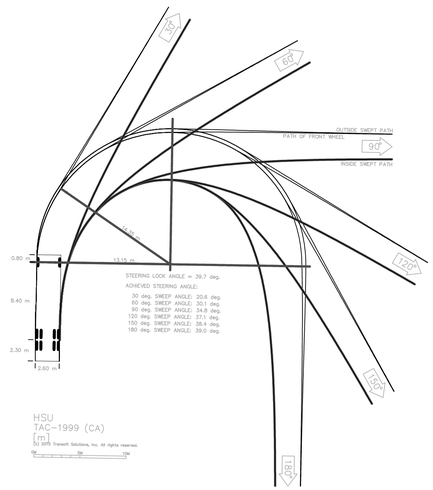
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	0	2	0	0	14	5	105	2	31	196	16
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.38	0.25	0.25	0.25	0.25	0.70	0.50	0.73	0.50	0.70	0.86	0.38
Hourly flow rate (vph)	26	0	8	0	0	20	10	144	4	44	228	42
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)											350	
pX, platoon unblocked												
vC, conflicting volume	523	505	249	511	524	146	270			148		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	523	505	249	511	524	146	270			148		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	94	100	99	100	100	98	99			97		
cM capacity (veh/h)	444	454	795	458	443	907	1305			1446		

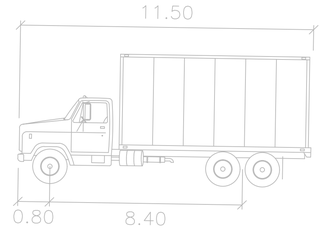
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	34	20	158	314
Volume Left	26	0	10	44
Volume Right	8	20	4	42
cSH	495	907	1305	1446
Volume to Capacity	0.07	0.02	0.01	0.03
Queue Length 95th (m)	1.8	0.5	0.2	0.8
Control Delay (s)	12.8	9.1	0.6	1.3
Lane LOS	B	A	A	A
Approach Delay (s)	12.8	9.1	0.6	1.3
Approach LOS	B	A		

Intersection Summary				
Average Delay	2.1			
Intersection Capacity Utilization	33.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Appendix F – Typical Garbage Truck AutoTURN Analysis







KEY PLAN

BENCHMARK

REVISONS

NO	REVISION	DATE	BY

STAMP

CIVIL CONSULTANT:

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Web: www.nextrans.ca

PROJECT NAME:

RESIDENTIAL DEVELOPMENT
Villalago Residence
(TOWN OF CALEDON, ON)

DRAWING TITLE:

AutoTURN Analysis
(MSU TAC-1999)

DESIGN BY: A.S.	DATE: March 27, 2017
CHECKED BY: R.P.	PROJECT NO. NT-16-031
DRAWN BY: A.S.	
SCALE: NTS	DRAWING NO. Appendix F

Appendix G – 2011 Transportation Tomorrow Survey (TTS) Site Traffic Trip Distribution

Thu Mar 24 2016 17:53:09 GMT-0400 (Eastern Daylight Time) - Run Time: 2953ms

Cross Tabulation Query Form - Trip - 2011
Row: 2006 GTA zone of origin - gta06_orig
Column: Planning district of destination - pd_dest
Table: Primary travel mode of trip - mode_prime

Filters:
(2006 GTA zone of origin - gta06_orig In 3190
and
Start time of trip - start_time In 600-900)

Trip 2011
Table: Auto driver

Zones	PD 1 of Toronto	PD 2 of Toronto	PD 3 of Toronto	PD 8 of Toronto	PD 9 of Toronto	PD 10 of Toronto	PD 11 of Toronto	Richmond Hill	Markham	King
Total Trips	15	23	18	23	139	60	23	45	18	79
Approach	Southbound	Southbound	Southbound	Southbound	Southbound	Southbound	Southbound	60% Eeastbound 40% Southbound	Southbound	Eastbound

Zones	King	Vaughan	Caledon	Brampton	Mississauga	Milton	TOTAL
Total Trips	79	289	713	300	287	18	**2050**
Approach	Eastbound	40% Southeast 60% South	90% Northbound 5% Southbound 5% Eastbound	Southbound	Southbound	Southbound	

Step 1 : Approach from Subject Site		Step 2 : Direction from Landbridge St and Queensgate Blvd intersection		Step 3: Site Traffic Trip Distribution at Landbridge St and Queensgate Blvd			
Southbound	1267	30% south towards Albion Vaughan Road =	380	N =	64	3%	**~ 5%**
		70% west towards Hwy 50 =	887	S =	380+28	20%	**~ 20%**
Northbound	642	10% north =	64	E =	113	6%	**~ 5%**
		90% west towards Hwy 50 =	578	W =	887+578	71%	**~ 70%**
Eastbound	142	80% east =	113		2050		**100%**
		20% south towards Albion Vaughan Road =	28				
TOTAL	2050		2050				

Appendix H – Town of Caledon Comments (November 16, 2016)

Villalago Residence Inc. Comment Chart

Villalago Residence Inc. Comment Response Chart

Date		Commenting Agency	Department	Comment	Response	Consultant
02-Nov-16	16.	Town of Caledon	Development - Landscape & Park and Recreation	Please note that an independent set of detailed park landscape plans is required as part of the subdivision drawing submission. A low decorative metal fence is required adjacent to the street frontage as part of the park design.		
02-Nov-16	18. a)	Town of Caledon	Transportation	The study area and the traffic operation assessment should also include the following intersections: i. Queen St. S. and Queensgate Blvd ii. Wood Cir. and Landsbridge St. iii. McCreary Trail and Landsbridge St. iv. Sheardown Trail and Landsbridge St.		Nextrans
02-Nov-16	18. b)	Town of Caledon	Transportation	The consultant used ITE LUC 231 rates, not equations, to estimate the site trips. However, in the report (Page 10), it is mentioned that trips were estimated using equations. This conflict needs to be clarified by the consultant		Nextrans
02-Nov-16	18. c)	Town of Caledon	Transportation	Site trips were assigned to the road network based on a trip distribution pattern developed through the use of TTS 2011 data (Table 4.2). Please provide the methodology and details tables (TTS)		Nextrans
02-Nov-16	18. d)	Town of Caledon	Transportation	Sightline analysis needs to be conducted, to ensure about the safety of site accesses		Nextrans
02-Nov-16	18. e)	Town of Caledon	Transportation	Staff note the study does not show the proposed offset between Hanton and Street ‘2’. Staff are not supportive of the proposed alignment of Street ‘2’ at the intersection of Landsbridge Street and Street ‘2’. The offset roadway from Hanton Crescent creates a traffic safety concern. At the DART Meeting, the applicant was advised that Street ‘2’ must line up with Hanton Crescent	Street '2' has been realigned to line up with Hanton Crescent	