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Transportation Impact Study

PROPOSED RESIDENTIAL DEVELOPMENT

168 County Road 49
Municipality of Trent Lakes, County of Peterborough Ontario

February 16, 2024
Project No: NT-23-207

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nexTrans CONSULTING ENGINEERS
NextEng Consulting Group Inc.

February 16, 2024

Jeffrey Homes
1200 Airport Boulevard, Suite 201
Oshawa, ON L1J 8P5

Attention: **Scott Jeffrey**

Re: **Transportation Impact Study**
Proposed Residential Development
168 County Road 49, Municipality of Trent Lakes
Our Project No. NT-23-207

NexTrans Consulting Engineers (a Division of NextEng Consulting Group Inc.) is pleased to present the enclosed Transportation Impact Study for the above noted site in support of a proposed draft plan of subdivision for a residential development.

The subject lands are bound by County Road 49 to the west, Moonline Road North to the east and are approximately 335 m north of Ellwood Crescent. The subject lands are municipally addressed as 168 County Road 49 in the Township of Harvey, Municipality of Trent Lakes, Ontario. The development proposal consists of 59 residential estate lots. The proposed development consists of the east and west subdivisions, which is separated by an environmental feature in the middle. Vehicular access to west subdivision is envisioned via Street 'A' and Street 'B', which will intersect with County Road 49. Vehicular access to the east subdivision is provided via Street 'C', which will intersect with Moon Line Road North.

It is to be noted that in support of the draft plan of subdivision application, The Greer Galloway Group Inc. prepared a Traffic Impact Assessment Report, dated December 15, 2022. The purpose of this Transportation Impact Study is to address the peer review comments provided on the previously submitted Traffic Impact Assessment Report, as well as to updated the traffic impacts of the site in accordance with the latest development proposal plans.

The results of the capacity analysis indicate that the proposed development can be supported by the existing road network, with a negligible traffic impact to the surrounding road network. We trust the enclosed sufficiently addresses your needs. Should you have any questions, please do not hesitate to contact the undersigned.

Yours truly,

NEXTRANS CONSULTING ENGINEERS

Prepared by:

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Approved by:

Richard Pernicky, MITE
Principal

Issues and Revisions Registry

Identification	Date	Description of issued and/or revision
Final Report	February 16, 2024	For first submission

EXECUTIVE SUMMARY

Nextrans Consulting Engineers is pleased to present the enclosed Transportation Impact Study in support of a draft plan of subdivision for a property municipally known as 168 County Road 49.

Development Proposal

The development proposal consists of 59 residential estate lots. The proposed development consists of the east and west subdivisions, which is separated by an environmental feature in the middle. Vehicular access to west subdivision is envisioned via Street 'A' and Street 'B', which will intersect with County Road 49. Vehicular access to the east subdivision is provided via Street 'C', which will intersect with Moon Line Road North.

Capacity Analysis

Based on trip generation calculations, the proposed development is expected to generate a total of 49 two-way gross trips (12 inbound and 37 outbound) during AM peak hour, and a total of 63 two-way gross trips (40 inbound and 23 outbound) during PM peak hour.

Under future total traffic conditions, all movements of the study area intersections analyzed, as well as the proposed site accesses onto County Road 49 and Moon Line Road North are projected to operate with residual capacity, with excellent levels of service, and with manageable delay and queue lengths during both AM and PM peak hour.

Parking Review

Based on the rates prescribed for the proposed land use, the proposed development requires a minimum of 59 vehicle parking spaces.

Vehicular Maneuverability Review

The AutoTURN analysis demonstrates that an aerial fire truck (NCHRP Report 659 (US)) can maneuver within the site unencumbered.

Peer Review Comments

It is our understanding that the County of Peterborough has retained Stantec Consulting Ltd. to conduct a peer review of the previously submitted Traffic Impact Assessment Report that was prepared in support of the draft plan of subdivision application. The comments provided by the peer reviewer are listed below, as well as our corresponding responses.

1. Comment #1 – Under Section 2.0, the TIA states that "The approach for this Traffic Impact Assessment was to follow the guidelines of the MTO General Guidelines for the Preparation of Traffic Impact Studies". It is not clarified why the MTO TIS Guideline was selected for this study. The study shall follow the County of Peterborough Traffic Impact Assessment Guidelines.

Response: Acknowledged.

2. Comment #2 – Under Section 2.0, the TIA states that "… utilizing Highway Capacity Software (HCS7) to determine if the existing road network has the ability to service the proposed development at an acceptable level of service". As per the County of Peterborough TIA Guidelines "The analyses should be done using Trafficware's, Synchro software". Please revise the analysis by utilizing Synchro.

Response: Acknowledged. Synchro 10 software was used to conduct the traffic analysis enclosed in this study.

3. Comment #3 – Under Section 2.0, the TIA states that traffic volumes "The traffic volumes generated by the proposed development were estimated using the Institute of Transportation Engineers (ITE) Trip Generation, 10th Edition, Code 210". The study shall utilize the latest ITE TG Manual (11th) version.

Response: The enclosed Transportation Impact Study utilizes information contained in the ITE Trip Generation Manual 11th Edition to generate site trips.

4. Comment #4 – Under Section 3.2, excerpts of the proposed development plan are shown as illustrated below. Both Street A and Street B seems to be planned to provide access to the future phases of the site and serve traffic volumes more than the traffic generated by the site discussed in this study. While the report states both roads will terminate in cul-de-sacs, Street A is extended north-east and Street B is divided to two roads and has an extension to north-west, west of Moon Line Road North, east of Block 23. The study shall be revised and include an estimation of the future phases of the development to consider the traffic expected to the future phases.

Response: The analysis has been updated in accordance with the latest development plans, and the site traffic generated by the entire site has been considered in this analysis.

5. Comment #5 – Under Section 3.3.1, TIA states that "County Road 49 is a main road that conveys traffic to and from the Town of Bobcaygeon and is under the jurisdiction of the City of Kawartha Lakes." County Road 49 is under the jurisdiction of the County of Peterborough.

Response: Acknowledged. Mention of County Road 49 being under the jurisdiction of the City of Kawartha Lakes has been removed.

6. Comment #6 – Under Section 4.0, TIA provides traffic counts in the study area. There are several concerns about this information as follows:
    - Traffic count for the intersection of CR49 and CR 36 is from 2009 (14 years old). Any data collected older than 3 years usually being considered as obsolete.

- Traffic counts in Section 4.2 are collected along County Road 36 approximately 4.8km east if its intersection with CR49. It is not clear what is the purpose of presenting this information.
- Manual traffic count presented in Section 4.3 does not provide information on the time span the data was collected (start and end time, AM peak, or PM peak). It is not clear when the data is collected or what exactly included in the SB, NB, EB, and WB volumes presented.
- There is no data available for Moon Line Road North.

It is recommended that new traffic counts at locations representing the future proposed site future access road locations at CR49 and Moon Line Road North to be conducted to be utilized for assessment of the access intersections.

Response: New traffic data was collected and used in the enclosed Transportation Impact Study.

7. Comment #7 – Under Section 5.1, the methodology used for trip generation calculation is not accurate, the analysis does not use the ITE average rate or fitted curve and only includes directional distribution percentages with the assumption of 1 trip per unit. Please update trip generation forecast to include the ITE 11th trip generation rate in the calculation.

Response: Trip rates and site generated trips were derived from the information contained in ITE Trip Generation Manual 11th Edition. The average rate was used to calculate the number of trips the subject site will generate.

8. Comment #8 – Please provide trip generation estimation for the future phases of the site. The access analysis shall include the full development traffic.

Response: The analysis has been updated in accordance with the latest development plans, and the site traffic generated by the entire site has been considered in this analysis.

9. Comment #9 – Under Section 6.1, the traffic volumes presented in Table 6-1 by "applying a general 2% annual growth rate to the 2009 traffic volumes presented in the 2012 City of Kawartha Lakes Master Plan, future traffic conditions for the year 2032" seems to be redundant. There are discrepancies between the data in this table and Table 6-2. As an example, while CR 40 SB in 2009 is reported as 440 veh/hr, it is reduced to 270 veh/hr in 2017. It is not clear what is the use of this information. We recommend new counts to be conducted at CR 49 and Moon Line Road North and to be utilized in the study.

Response: New traffic data was collected and used in the enclosed Transportation Impact Study.

10. Comment #10 – It is not clear why CR 39 data is presented in the study as it is not being used in the future sections.

Response: Acknowledged. The study area intersections and associated traffic data reviewed in the enclosed study have been updated.

11. Comment #11 – Please provide figures for the traffic volumes forecasted at the intersection of CR 49 and Street A and the intersection of Moon Line Road North and Street B for both AM and PM peak hours. It shall include trips to the future phases on the development as well.

Response: Traffic figures have been included in the enclosed study.

12. Comment #12 – Under Section 6.2, the study shall provide operations analysis for both access intersections including the intersection of CR 49 and Street A and the intersection of Moon Line Road North and Street B using Synchro software and based on updated traffic volumes considering the comment provided in this peer review.

Response: Acknowledged. Access operations are included in the future total section of the enclosed study.

13. Comment #13 – The study shall provide auxiliary lane warrant analysis for left and right turns at the access intersections as per the County TIA Guidelines.

Response: Left turn lane warrant analysis is discussed in the future total section of the enclosed Transportation Impact Study, and excerpts of left turn lane warrants from the TAC-2017 Guidelines are enclosed in **Appendix F**.

14. Comment #14 – Site internal circulation shall be reviewed. The site entrances and internal circulation including proposed cul-de-sacs must be designed to meet County and local municipal standards for the land use that is being developed. The internal roads must have a cross-section that will provide for good internal site traffic circulation as well as, access by municipal service vehicles and EMS vehicles.

Response: AutoTURN analysis demonstrates that a P TAC-2017 vehicle and fire truck are able to enter and exit the subject site unencumbered as well as maneuver throughout the proposed cul-de-sac without issue.

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APPENDICES

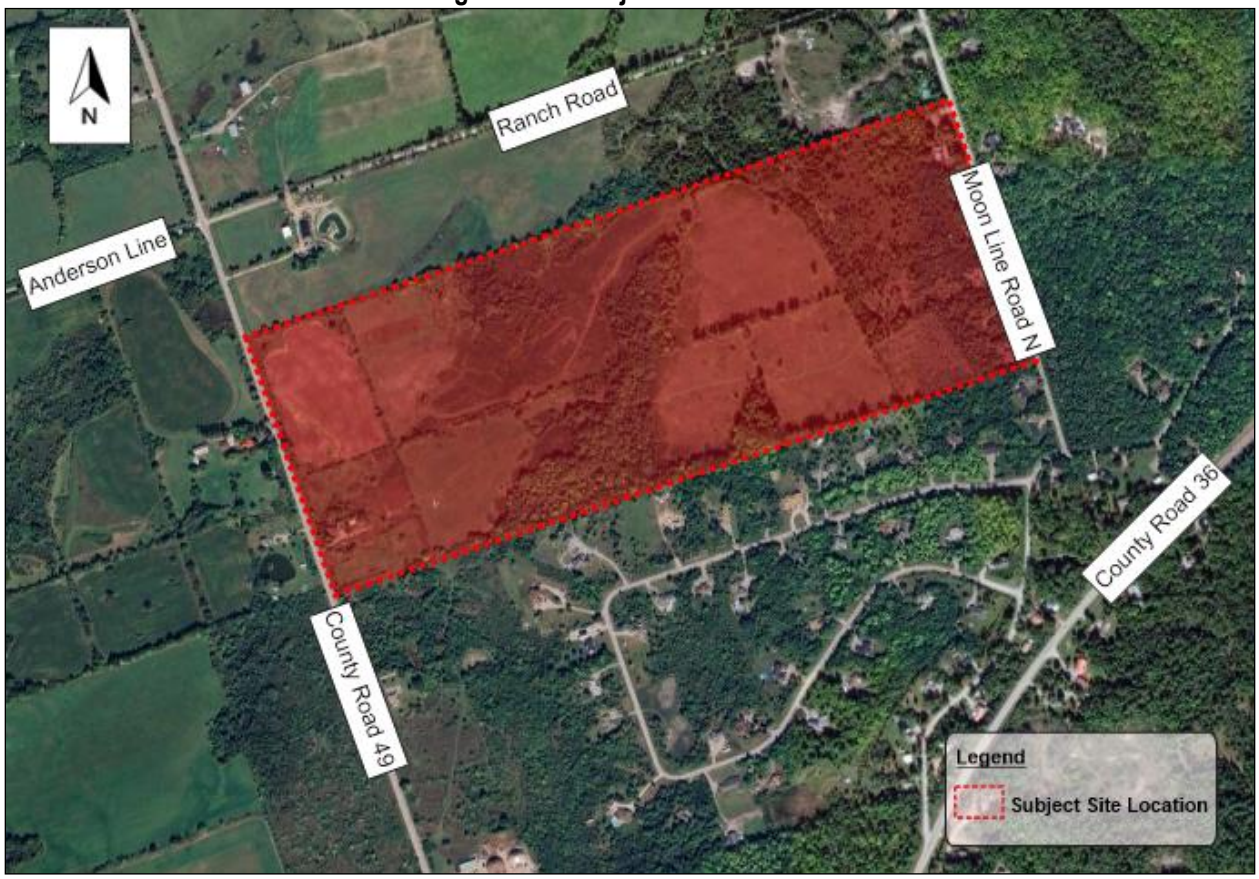
1.0 INTRODUCTION

Nextrans Consulting Engineers (A Division of NextEng Consulting Group Inc.) was retained by Jeffery Homes (the 'Client') to undertake a Transportation Impact Study in support of a proposed draft plan of subdivision for a residential development. The purposes of this Study Update are to address the peer review comments previously listed and assess the latest proposed development design and statistics. The original Traffic Impact Assessment Report was prepared by The Greer Galloway Group Inc. dated December 15, 2022.

The Site is located at 168 County Road 49 in the Township of Harvey, Municipality of Trent Lakes, Ontario. The site is bounded by County Road 49 to the west, Moon Line Road North to the east, undeveloped lands to the north and residential properties fronting Ellwood Crescent to the south. The location of the proposed development is illustrated in **Figure 1**.

This Transportation Impact Study has been prepared in accordance with the County of Peterborough Traffic Impact Assessment Guidelines to address all peer review comment provided by Stantec Consulting Ltd. dated March 13, 2023. It should be noted that since detailed comments are provided by Stantec Consulting Ltd. as part of the peer review for The Greer Galloway's previous Traffic Impact Study, no additional study terms of reference is submitted for this Study Update since all comments have been fully addressed in this Update Study.

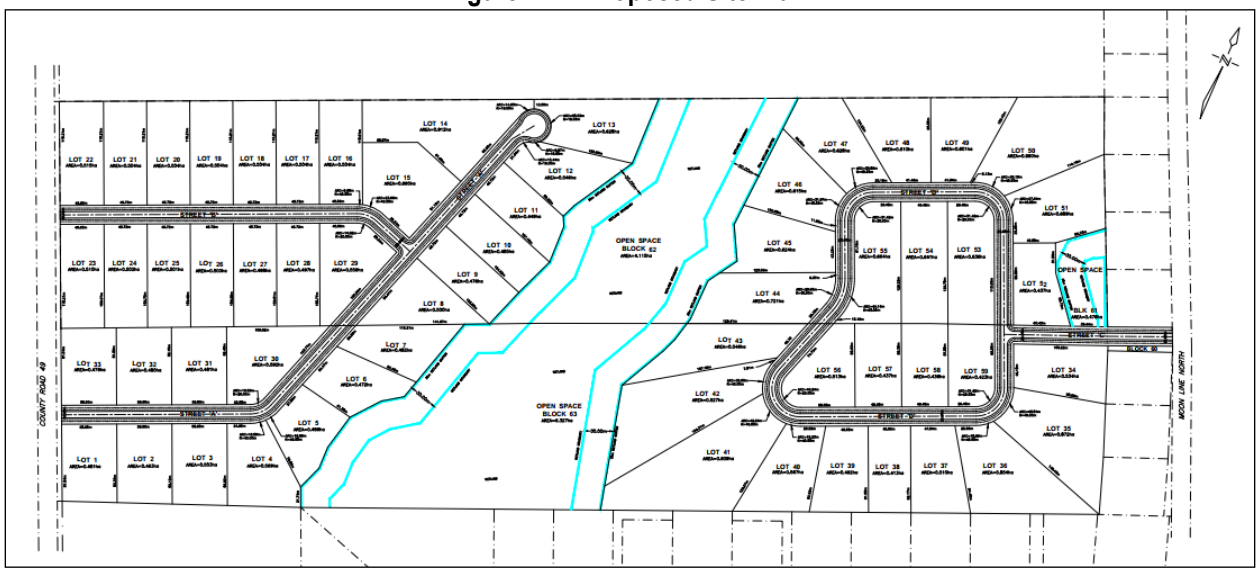
Figure 1-1 – Subject Site Location



The development proposal consists of 59 residential estate lots. The proposed development consists of the east and west subdivisions, which is separated by an environmental feature in the middle. Access to the east subdivision is provided via Street 'C' onto Moon Line Road North, with accesses to the west subdivision are provided by Street 'A' and Street 'B' onto County Road 49.

The proposed site plan is illustrated in **Figure 1-2** and provided in full detail in **Appendix B**.

Figure 1-2 – Proposed Site Plan



2.0 EXISTING TRAFFIC CONDITIONS

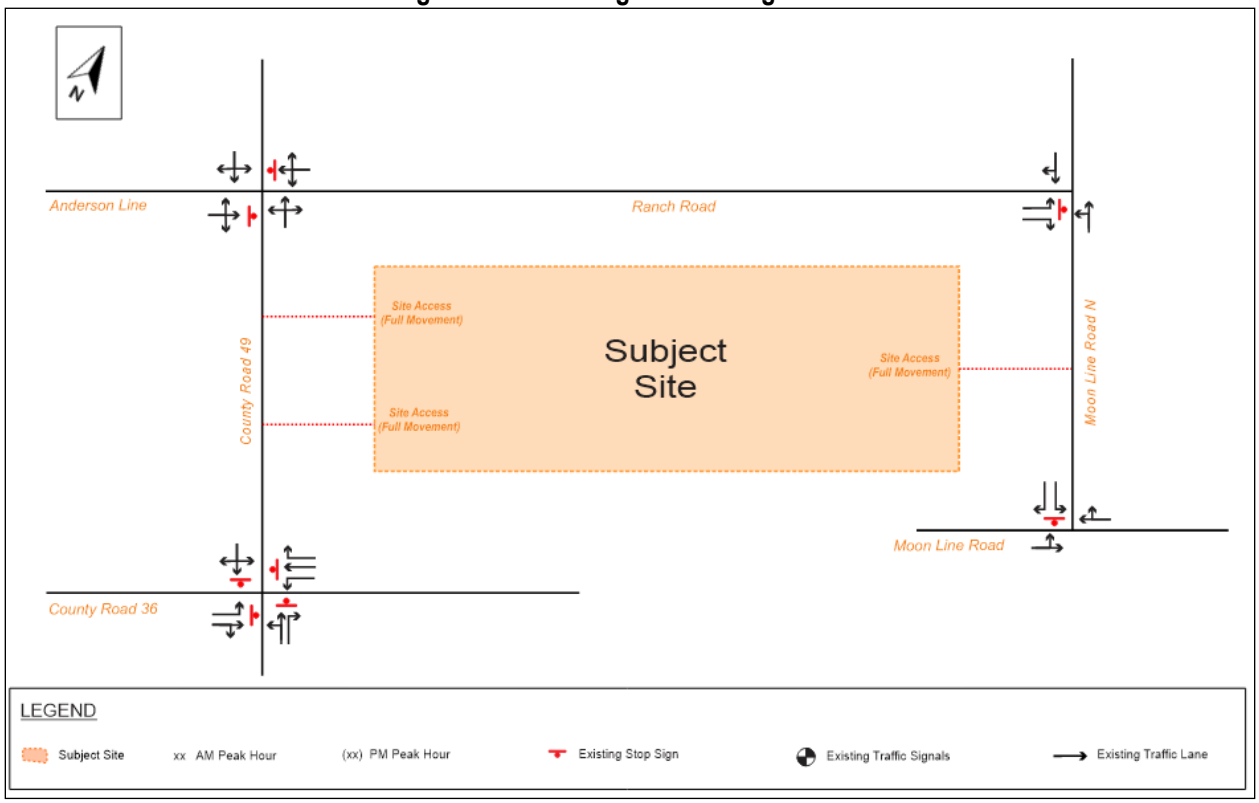
2.1. Existing Road Network

The existing road network, lane configuration and existing traffic control for the study area are described below.

- **County Road 49/East Street N** is classified as a north-south arterial road. County Road 49/East Street N operates with a two (2)-lane cross section (one (1)-travel lane per direction) in the vicinity of the study area. It generally maintains an assumed and unposted speed limit of 50 km/h.
- **Peterborough County Road 36** is an east-west arterial road. Peterborough County Road 36 operates with a two (2)-lane cross section (one (1)-travel lane per direction) in the vicinity of the study area. It generally maintains a posted speed limit of 50 km/h.
- **Moon Line Road North** is a north-south local road. Moon Line Road North operates with a two (2)-lane cross section (one (1)-travel lane per direction) in the vicinity of the study area. It generally maintains a posted speed limit of 35 km/h.
- **Ranch Road** is an east-west local road. Ranch Road operates with a two (2)-lane cross section (one (1)-travel lane per direction) in the vicinity of the study area. It generally maintains an assumed and unposted speed limit of 50 km/h.
- **Anderson Line** is an east-west local road. Anderson Line operates with a two (2)-lane cross section (one (1)-travel lane per direction) in the vicinity of the study area. It generally maintains an assumed and unposted speed limit of 50 km/h.

Existing road network lane configurations are illustrated in **Figure 2-1**.

Figure 2-1 – Existing Lane Configuration



2.2. Existing Active Transportation Network

Sidewalks

Currently, there are no sidewalks available within the comfortable walking distance from the subject site.

Cycling

Currently, there are no cycling facilities available within the surrounding area of the subject site.

2.3. Existing Transit Facilities

Currently, there are no existing transit facilities available within the surrounding area of the subject site.

2.4. Existing Traffic Volumes

Weekday morning and afternoon peak period turning movement counts (TMC) were undertaken by Spectrum Traffic for all study area intersections during the weekday AM and PM peak periods. Existing traffic data, including TMC data and signal timing plans provided by the Region, are enclosed in **Appendix B**. A summary of traffic data collection is provided in **Table 2.1**.

Table 2.1: Traffic Data Collection Summary

Intersection	Source	Survey Date
County Road 49 & Anderson Line / Ranch Road	Spectrum Traffic Inc.	November 15, 2023
County Road 49 & County Road 36	Spectrum Traffic Inc.	November 15, 2023
Moon Line Road North & Ranch Road	Spectrum Traffic Inc.	January 24, 2024
Moon Line Road North & Moon Line Road	Spectrum Traffic Inc.	January 24, 2024

2.5. Existing Traffic Assessment

It is noted that the peak hour factor (PHF) was calculated for each of the study area intersections for both AM and PM peak hours. The calculated PHF was carried forward in all future scenarios as well. Peak hour factors were calculated and applied per intersection using the following equation:

$$PHF = \frac{total\ peak\ hour\ volume}{4 * peak\ 15\ minute\ volume}$$

Baseline existing traffic volumes are illustrated in **Figure 2-2** and were analyzed using Synchro 10 in accordance with the methodology outlined in the highway Capacity Manual (HCM 2000) published by the Transportation Research Board. The detailed results are provided in **Appendix C** and summarized in **Table 2.2**.

Table 2.2 – Level of Service – Existing Traffic Assessment

Intersection	Movement	Weekday AM Peak Hour				Weekday PM Peak Hour			
		v/c	Delay (s)	LOS	Queue 95th	v/c	Delay (s)	LOS	Queue 95th
Unsignalized Intersections									
County Road 49 & Anderson Line/Ranch Road	EBLTR	0.01	9.1	A	0.2	0.01	9.2	A	0.2
	WBLTR	0.00	10.3	B	0.1	0.01	9.4	A	0.2
	NBLTR	0.00	0.2	A	0.0	0.00	0.3	A	0.1
	SBLTR	0.00	0.1	A	0.0	0.00	0.3	A	0.1
East Street N/County Road 49 & Main Street/County Road 36	EBLTR	0.15	8.9	A	0.5	0.15	8.8	A	0.5
	WBLTR	0.30	11.0	B	1.2	0.29	10.7	A	1.1
	NBLTR	0.21	9.5	A	0.7	0.24	9.3	A	0.9
	SBLTR	0.33	11.7	B	1.3	0.29	11.1	B	1.1
Moon Line Road & Moon Line Road North	EBLT	0.00	2.2	A	0.0	0.01	4.3	A	0.3
	SBLR	0.01	8.4	A	0.3	0.00	8.3	A	0.1
Moon Line Road North & Ranch Road/Private Driveway	EBLTR	0.00	0.0	A	0.0	0.00	0.0	A	0.0
	WBLTR	0.00	0.0	A	0.0	0.00	0.0	A	0.0
	NBLTR	0.00	7.7	A	0.1	0.00	7.2	A	0.1

Based on the results of the capacity analysis under existing traffic conditions, all study area intersections currently operate with residual capacity (i.e., volume to capacity ratio or V/C < 1.00), with excellent levels of service and with minimal delay and queue lengths during both AM and PM peak hours.

3.0 FUTURE BACKGROUND CONDITIONS

3.1. Future Corridor Growth

In lieu of historical AADT data within the study area, a conservative 2% growth rate per annum was applied to the through volumes of County Road 49 and County Road 36 to model future traffic growth within the area.

3.2. Background Developments

A review of background developments within the study area was conducted to identify future traffic contributors. It is noted that based on our review, there are no notable developments within the immediate study area and as such, traffic growth within the area was captured via the conservative 2% annual growth rate applied.

3.3. Future Background Traffic Assessment

The estimated future background traffic volumes are illustrated in **Figure 3-1**. The detailed Synchro capacity analysis results for future are summarized in **Table 3.1** and the detailed reports are enclosed in **Appendix D**.

Table 3.1 – Future Background Traffic Assessment

Intersection	Movement	Weekday AM Peak Hour				Weekday PM Peak Hour			
		v/c	Delay (s)	LOS	Queue 95th	v/c	Delay (s)	LOS	Queue 95th
Unsignalized Intersections									
County Road 49 & Anderson Line/Ranch Road	EBLTR	0.01	9.2	A	0.2	0.01	9.2	A	0.2
	WBLTR	0.00	10.5	B	0.1	0.01	9.5	A	0.2
	NBLTR	0.00	0.1	A	0.0	0.00	0.3	A	0.1
	SBLTR	0.00	0.1	A	0.0	0.00	0.2	A	0.1
East Street N/County Road 49 & Main Street/County Road 36	EBLTR	0.17	9.1	A	0.6	0.17	8.9	A	0.6
	WBLTR	0.31	11.2	B	1.2	0.29	10.9	B	1.1
	NBLTR	0.24	9.9	A	0.8	0.27	9.7	A	1.0
	SBLTR	0.37	12.3	B	1.6	0.32	11.6	B	1.3
Moon Line Road & Moon Line Road North	EBLT	0.00	2.2	A	0.0	0.01	4.3	A	0.3
	SBLR	0.01	8.4	A	0.3	0.00	8.3	A	0.1
Moon Line Road North & Ranch Road/Private Driveway	EBLTR	0.00	0.0	A	0.0	0.00	0.0	A	0.0
	WBLTR	0.00	0.0	A	0.0	0.00	0.0	A	0.0
	NBLTR	0.00	7.7	A	0.1	0.00	7.2	A	0.1

Based on the results of the capacity analysis under future background traffic conditions, all study area intersections are projected to operate with residual capacity (i.e., volume to capacity ratio or V/C < 1.00), with excellent levels of service and with manageable delay and queue lengths during both AM and PM peak hours.

4.0 SITE TRAFFIC

4.1. ITE Trip Generation

The development proposal is to redevelop the existing subject lands to construct 59 residential estate lots. Trip rates and site generated trips were derived from the information contained in the *Trip Generation Manual, 11th Edition* published by the Institute of Transportation Engineers (ITE) for "Single Family Detached Housing" (LUC 210) for the townhouse blocks.

Trip generation was calculated in accordance with the access arrangement given that the east and west parcels are provided access via different roads. The trip generation summary is shown in **Table 4.1**.

Table 4.1 – Site Traffic Trip Generation

ITE Land Use	Parameter	Morning Peak Hour			Afternoon Peak Hour		
		In	Out	Total	In	Out	Total
West Parcel							
Single Family Detached Housing	Gross Trips	6	18	24	20	11	31
	Gross Rate	0.21	0.62	0.83	0.69	0.38	1.07
East Parcel							
Single Family Detached Housing	Gross Trips	6	19	25	20	12	32
	Gross Rate	0.20	0.63	0.83	0.67	0.40	1.07
Total Gross Trips		**12**	**37**	**49**	**40**	**23**	**63**

Based on trip generation calculations, the proposed development is expected to generate a total of 49 two-way gross trips (12 inbound and 37 outbound) during AM peak hour, and a total of 63 two-way gross trips (40 inbound and 23 outbound) during PM peak hour.

4.2. Trip Distribution

The assumptions for trip distribution rates are based on the distributional splits of existing TMC data within the study area road network, as well as engineering judgement for routes that drivers would likely take to and from the multiple site accesses. Given that vehicular access to the westerly portion of the site is provided via Street A and Street B, a 50% of trips were assigned to each of the site accesses.

Trip distribution is summarized in **Table 4.2** and trip assignment is illustrated in **Figure 4-1**.

Table 4.2 – Site Traffic Trip Distribution

Corridor	Direction	AM		PM	
		Inbound	Outbound	Inbound	Outbound
West Parcel					
County Road 49	N	43%	38%	40%	44%
	S	38%	50%	39%	44%
County Road 36	E	12%	4%	8%	5%
	W	7%	8%	13%	7%
Total		**100%**	**100%**	**100%**	**100%**
East Parcel					
County Road 49	N	33%	0%	36%	80%
	S	21%	57%	37%	13%
County Road 36	E	33%	11%	9%	0%
	W	12%	32%	18%	7%
Total		**100%**	**100%**	**100%**	**100%**

5.0 FUTURE TOTAL ANALYSIS

5.1. Future Total Traffic Assessment

The forecasted future total traffic volumes are defined as the sum of the distributed site-generated traffic and future background traffic volumes. The future total traffic volumes are illustrated in **Figure 5-1.** The capacity analysis results are summarized in **Table 5.1** and detailed reports are provided in **Appendix E**.

Table 5.1 – Level of Service – Future Total Traffic Assessment

Intersection	Movement	Weekday AM Peak Hour				Weekday PM Peak Hour			
		v/c	Delay (s)	LOS	Queue 95th	v/c	Delay (s)	LOS	Queue 95th
Unsignalized Intersections									
County Road 49 & Anderson Line/Ranch Road	EBLTR	0.01	9.2	A	0.2	0.01	9.3	A	0.2
	WBLTR	0.00	10.6	B	0.1	0.02	9.3	A	0.5
	NBLTR	0.00	0.1	A	0.0	0.00	0.3	A	0.1
	SBLTR	0.00	0.2	A	0.1	0.01	0.7	A	0.2
East Street N/County Road 49 & Main Street/County Road 36	EBLTR	0.18	9.3	A	0.6	0.18	9.0	A	0.6
	WBLTR	0.33	11.7	B	1.4	0.30	11.2	B	1.2
	NBLTR	0.39	10.2	A	0.9	0.34	10.0	A	1.1
	SBLTR	0.39	12.8	B	1.8	0.34	11.9	B	1.4
Moon Line Road & Moon Line Road North	EBLT	0.00	3.3	A	0.00	0.04	6.0	A	0.9
	SBLR	0.04	8.5	A	0.04	0.01	8.4	A	0.2
Moon Line Road North & Ranch Road/Private Driveway	EBLTR	0.00	8.3	A	0.1	0.03	8.5	A	0.6
	WBLTR	0.00	0.0	A	0.0	0.00	0.0	A	0.0
	NBLTR	0.00	7.7	A	0.1	0.03	7.3	A	0.6
Site Accesses									
County Road 49 & Street B	EBLTR	0.01	9.7	A	0.3	0.01	9.8	A	0.2
	WBLTR	0.00	0.1	A	0.0	0.00	0.2	A	0.1
County Road 49 & Street A	EBLTR	0.01	9.7	A	0.3	0.01	9.8	A	0.2
	WBLTR	0.00	0.1	A	0.0	0.00	0.2	A	0.1
Moon Line Road North & Street C	EBLT	0.03	8.4	A	0.6	0.05	9.3	A	1.2
	SBLR	0.00	4.9	A	0.1	0.03	6.8	A	0.7

Under future total traffic conditions, all movements of the study area intersections analyzed, as well as the proposed site accesses onto County Road 49 and Moon Line Road North are projected to operate with residual capacity, with excellent levels of service, and with manageable delay and queue lengths during both AM and PM peak hour.

As such, the projected site traffic generated by the proposed development will have a negligible impact to the future operations of the study area road network.

5.2. Left Turn Lane Warrant Analysis

The MTO Design Supplement for TAC Geometric Design Guide for Canadian Roads, April 2020, was reviewed to determine if left turn lanes are warranted on County Road 49 at the intersections of Street A and Street B. Given that under existing conditions, as well as under projected future total traffic conditions, there are low traffic volumes along Moon Line Road North, left turn lane warrant analysis for Street C was not considered.

For the purposes of this assessment, future total PM traffic volumes were used as this would provide a more conservative analysis in comparison to the use of future total AM traffic volumes. The following parameters were used to conduct the analysis:

V_A = 129 vehicles
V_O = 144 vehicles
% of advancing vehicles turning left = 3%
Design Speed = 60 km/h (unposted 50 km/h + 10 km/h)

An excerpt of the MTO Design Supplement is enclosed in **Appendix F** that illustrates the above parameters.

Based on Exhibit 9A-7 of the MTO Design Supplement, auxiliary left turn lanes are not required for Street A or Street B. Based on the results of the traffic assessments under future total traffic conditions, it is to be noted that no operational deficiencies are projected for the northbound right movements where County Road 49 intersects Street A and Street B. On this basis, auxiliary right turning lanes are not warranted.

6.0 PARKING ASSESSMENT

6.1. Parking Requirements

6.1.1. Vehicle Parking Requirements

The subject lands are subject to the parking requirements stipulated within the Municipality of Trent Lakes Zoning By-law 2014-070. The technical parking requirement is detailed in **Table 6.1**.

Table 6.1 – Vehicle Parking Requirements (Zoning By-law 2014-070 Section 4.25)

Land Use	Type	No. of Units	Parking Rate	Min. Parking Requirement
Single Detached	Resident	59	1 per dwelling unit	59

Based on the rates prescribed for the proposed land use, the proposed development requires a minimum of 59 vehicle parking spaces.

7.0 SITE PLAN REVIEW

7.1. Site Circulation

AutoTURN software was used to generate a vehicular turning template to confirm and demonstrate the accessibility of the proposed study area. Given that the development application is for a draft plan of subdivision, the detailed road and entrance designs are not available. As such, AutoTURN software was used to demonstrate that an aerial fire truck (NCHRP Report 659 (US)) can maneuver throughout the internal road network and can complete a turn within the cul-de-sac unencumbered.

The AutoTURN analysis is illustrated in **Figure 7-1**.

8.0 CONCLUSION

8.1. Study Findings

The findings of our analysis are as follows:

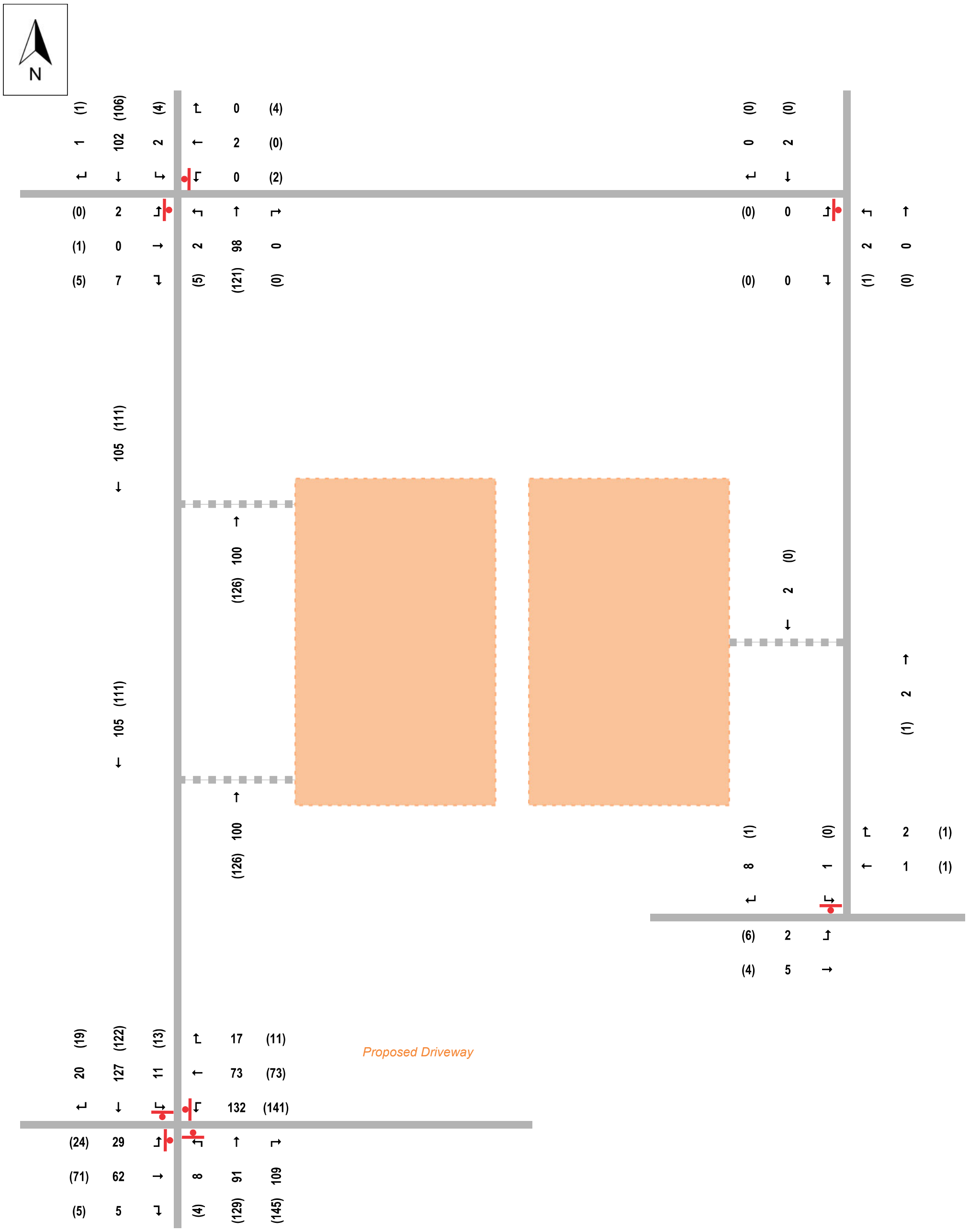
- The development proposal consists of 59 residential estate lots. The proposed development consists of the east and west subdivisions, which is separated by an environmental feature in the middle. Access to the east subdivision is provided via Street 'C' onto Moon Line Road North, with accesses to the west subdivision are provided by Street 'A' and Street 'B' onto County Road 49.
- Based on the results of the capacity analysis under existing traffic conditions, all study area intersections currently operate with residual capacity (i.e., volume to capacity ratio or V/C < 1.00), with excellent levels of service and with minimal delay and queue lengths during both AM and PM peak hours.
- Based on the results of the capacity analysis under future background traffic conditions, all study area intersections are projected to operate with residual capacity (i.e., volume to capacity ratio or V/C < 1.00), with excellent levels of service and with manageable delay and queue lengths during both AM and PM peak hours.
- Based on trip generation calculations, the proposed development is expected to generate a total of 49 two-way gross trips (12 inbound and 37 outbound) during AM peak hour, and a total of 63 two-way gross trips (40 inbound and 23 outbound) during PM peak hour.
- Under future total traffic conditions, all movements of the study area intersections analyzed, as well as the proposed site accesses onto County Road 49 and Moon Line Road North are projected to operate with residual capacity, with excellent levels of service, and with manageable delay and queue lengths during both AM and PM peak hour.
- The MTO Design Supplement was reviewed to determine if auxiliary left turn lanes are warranted at Street A and Street B. Based on the assessment, the warrants for auxiliary left turn lanes are not warranted. Analysis of future total traffic volumes does not identify any operation deficiencies and as such, auxiliary right turn lanes are also not warranted at Street A or Street B.
- Based on the rates prescribed for the proposed land uses, the proposed development requires 59 vehicle parking spaces.
- AutoTURN software was used to demonstrate that an aerial fire truck (NCHRP Report 659 (US)) can maneuver throughout the internal road network and can complete a turn within the cul-de-sac unencumbered.

8.2. Study Conclusions and Recommendations

Based on the findings of our analysis, our conclusions and recommendations are as follows:

- The projected site traffic generated by the proposed development will have a negligible impact to the future operations of the study area road network.
- Based on the assessments completed in this study, auxiliary turning lanes are not required to support the development site traffic generated by the subject site.

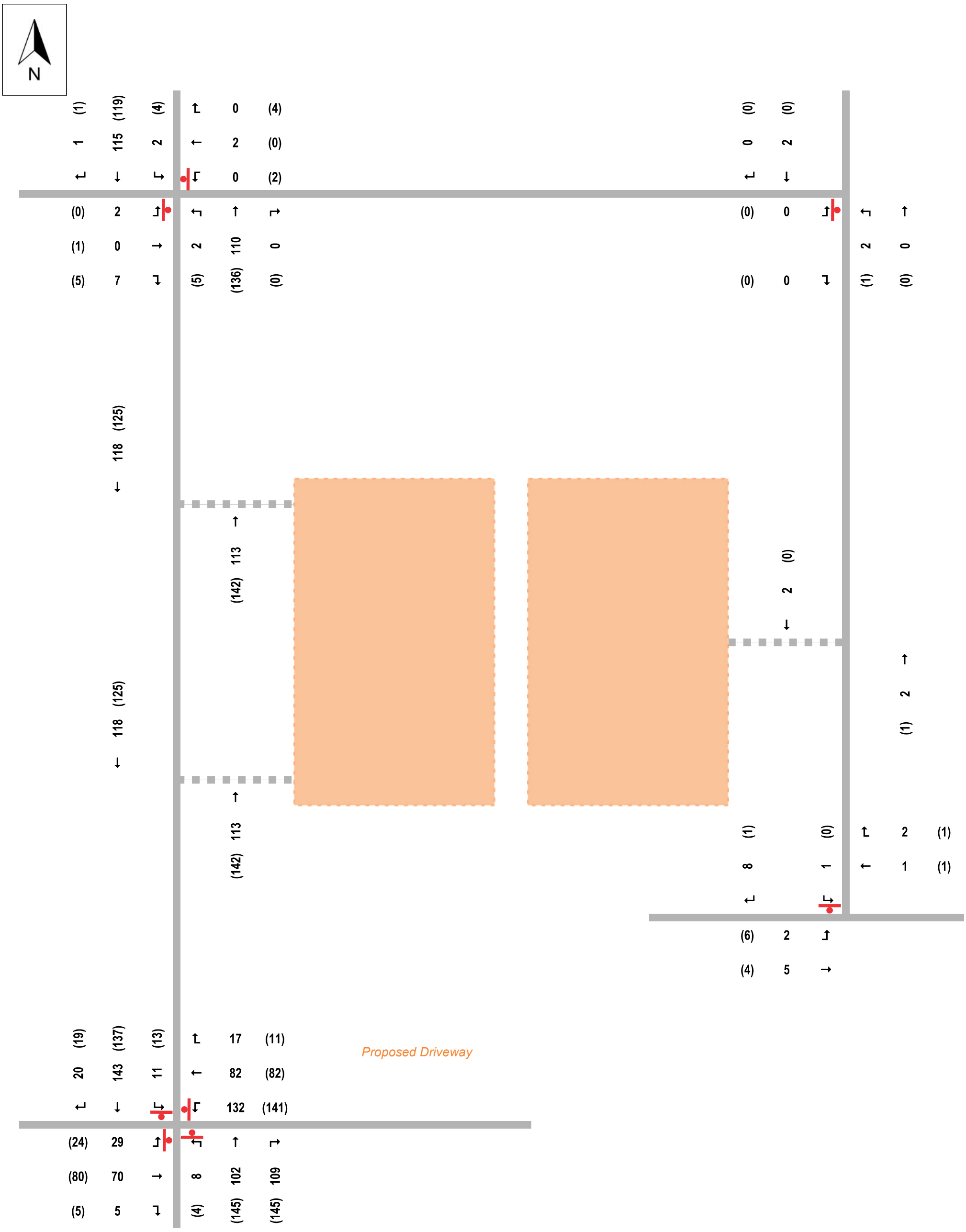
Figure 2-2: Existing Traffic Volumes



LEGEND

Subject Site | xx AM Peak Hour | (xx) PM Peak Hour | Existing Stop Sign | Existing Traffic Signals

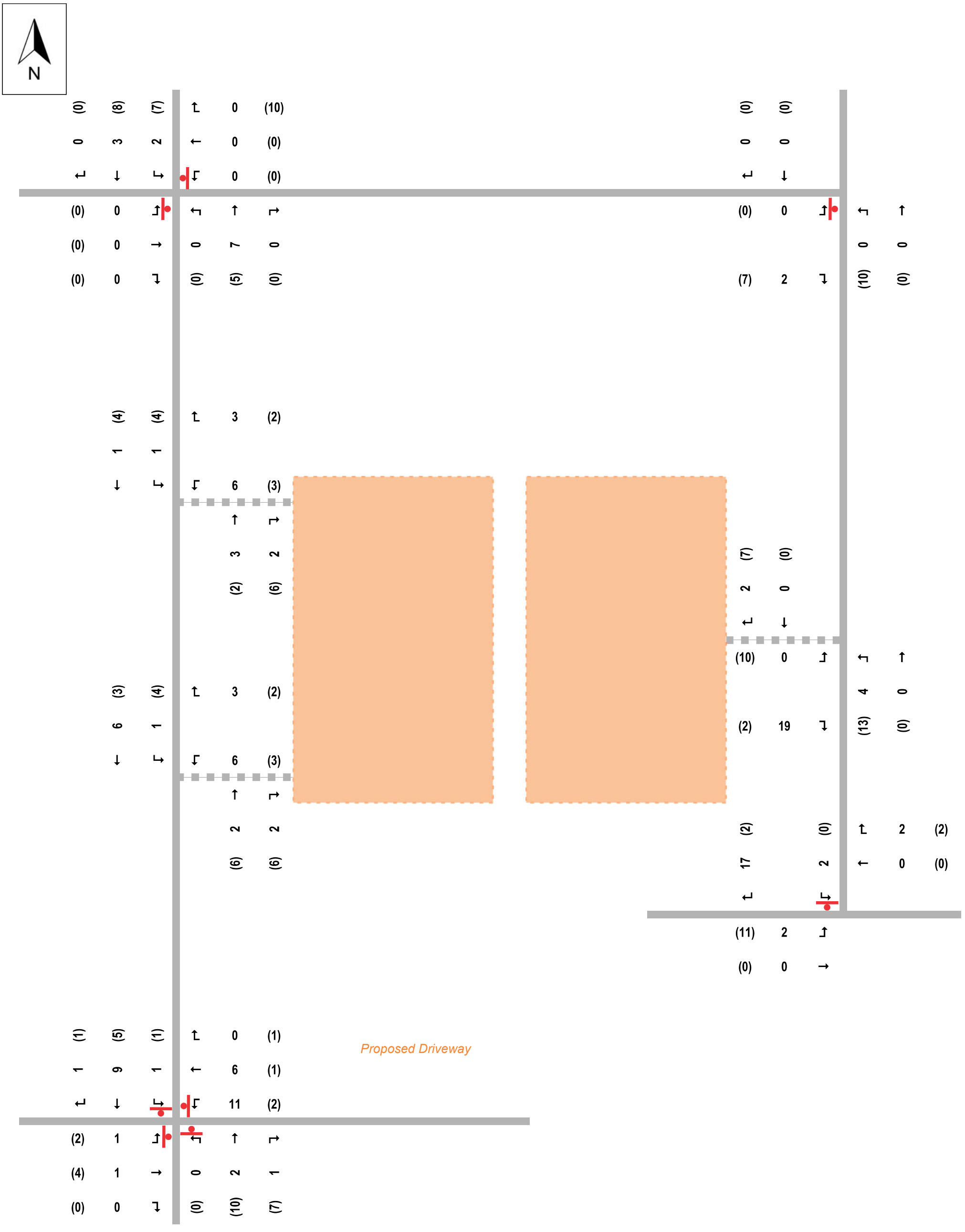
Figure 3-1: Future Background Traffic Volumes



LEGEND

Subject Site | xx AM Peak Hour | (xx) PM Peak Hour | Existing Stop Sign | Existing Traffic Signals

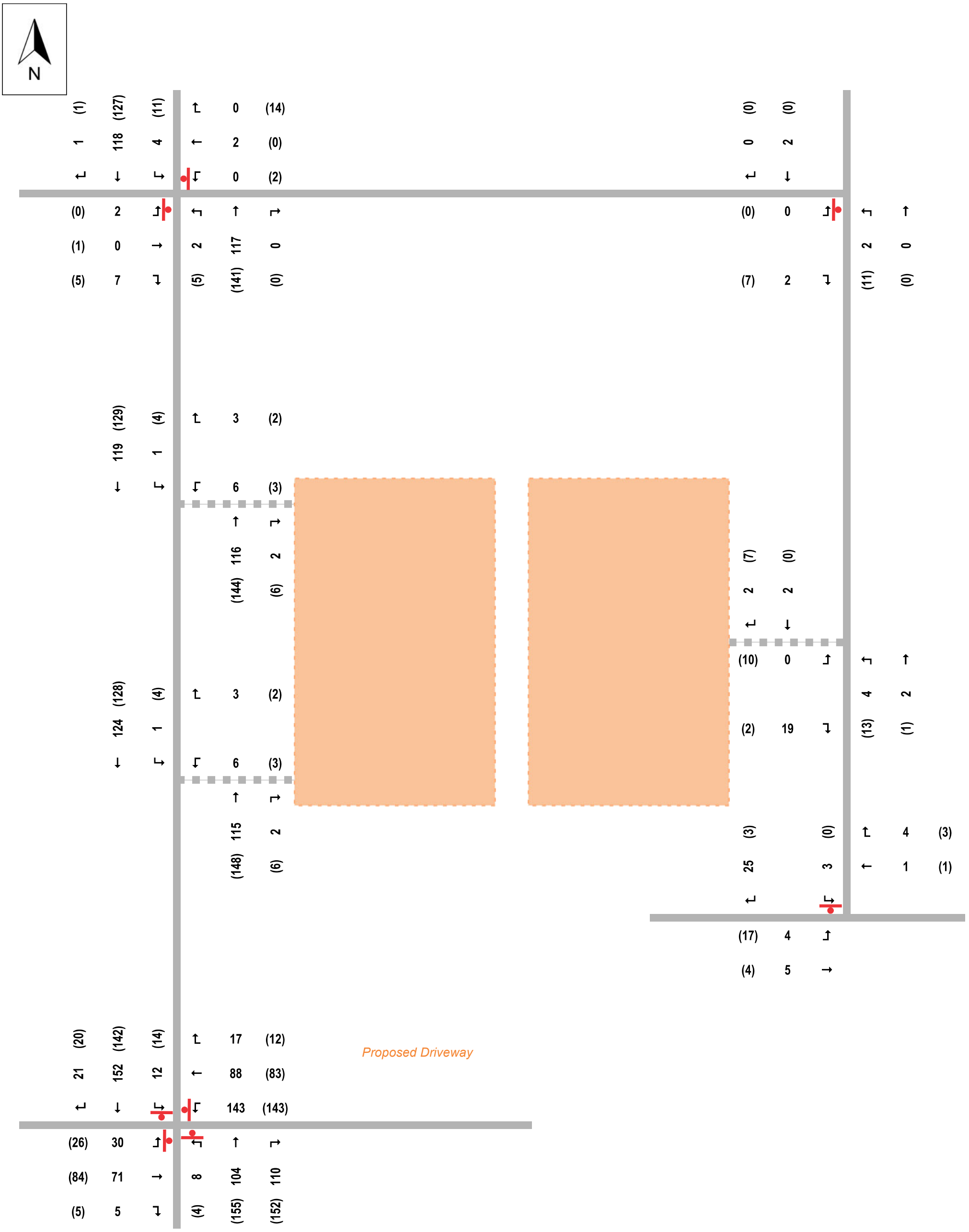
Figure 4-1: Site Traffic Volumes



LEGEND

Subject Site | xx AM Peak Hour | (xx) PM Peak Hour | Existing Stop Sign | Existing Traffic Signals

Figure 5-1: Future Total Traffic Volumes



LEGEND

Subject Site | xx AM Peak Hour | (xx) PM Peak Hour | Existing Stop Sign | Existing Traffic Signals

KEY PLAN

BENCHMARK

REVISONS

NO	REVISION	DATE	BY

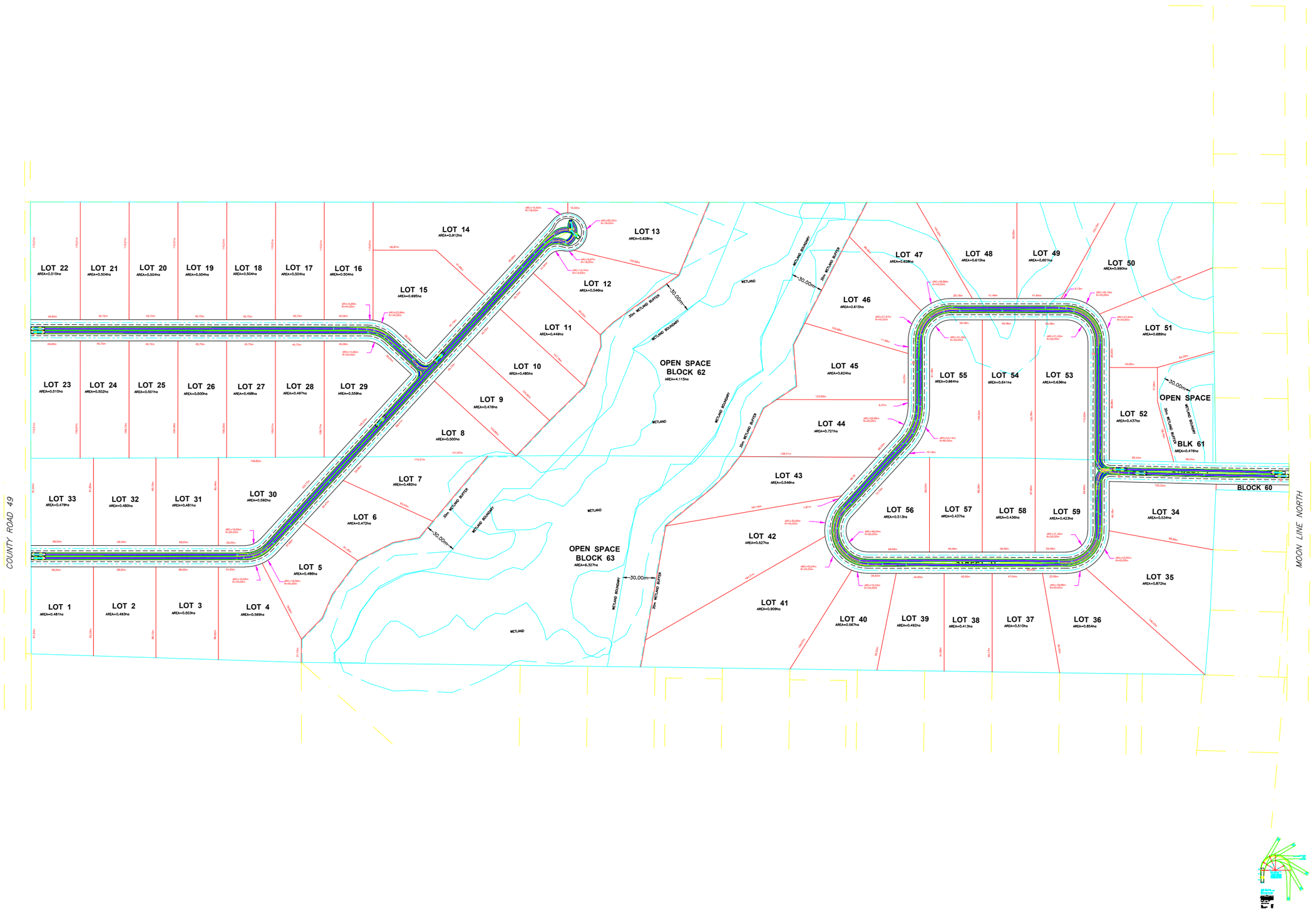
STAMP

nextrans
CONSULTING ENGINEERS
Suite 201, 520 Industrial Parkway South
Aurora ON L4G 6W8
Tel: 905-503-2563
Web: www.nextrans.ca

PROJECT NAME:
Residential Subdivision
168 County Road 4
Municipality of Trent Lakes

DRAWING TITLE:
AutoTURN Analysis
P TAC–2017

DESIGN BY: K.A.	DATE: February 16, 2024
CHECKED BY: R.P.	PROJECT NO. NT-23-207
DRAWN BY: K.A.	
SCALE: NTS	DRAWING NO. Figure 7-1



KEY PLAN

BENCHMARK

REVISONS

NO	REVISION	DATE	BY

STAMP

nexTrans
CONSULTING ENGINEERS
Suite 201, 520 Industrial Parkway South
Aurora ON L4G 6W8
Tel: 905-503-2563
Web: www.nextrans.ca

PROJECT NAME:
Residential Subdivision
168 County Road 4
Municipality of Trent Lakes

DRAWING TITLE:
AutoTURN Analysis
Aerial Fire Truck
NCHRP Report 659

DESIGN BY: K.A.	DATE: February 16, 2024
CHECKED BY: R.P.	PROJECT NO. NT-23-207
DRAWN BY: K.A.	
SCALE: NTS	DRAWING NO. Figure 7-2

Appendix A – Site Plan

COUNTY ROAD 49

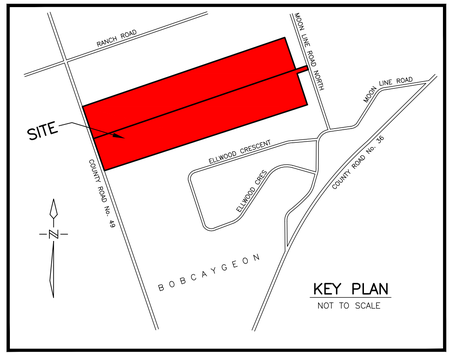
MOON LINE NORTH

LOT 1 AREA=0.481ha
LOT 2 AREA=0.493ha
LOT 3 AREA=0.503ha
LOT 4 AREA=0.569ha
LOT 5 AREA=0.486ha
LOT 6 AREA=0.472ha
LOT 7 AREA=0.482ha
LOT 8 AREA=0.500ha
LOT 9 AREA=0.476ha
LOT 10 AREA=0.485ha
LOT 11 AREA=0.449ha
LOT 12 AREA=0.546ha
LOT 13 AREA=0.628ha
LOT 14 AREA=0.912ha
LOT 15 AREA=0.695ha
LOT 16 AREA=0.504ha
LOT 17 AREA=0.504ha
LOT 18 AREA=0.504ha
LOT 19 AREA=0.504ha
LOT 20 AREA=0.504ha
LOT 21 AREA=0.504ha
LOT 22 AREA=0.515ha
LOT 23 AREA=0.510ha
LOT 24 AREA=0.502ha
LOT 25 AREA=0.501ha
LOT 26 AREA=0.500ha
LOT 27 AREA=0.498ha
LOT 28 AREA=0.497ha
LOT 29 AREA=0.559ha
LOT 30 AREA=0.592ha
LOT 31 AREA=0.481ha
LOT 32 AREA=0.480ha
LOT 33 AREA=0.479ha
LOT 34 AREA=0.534ha
LOT 35 AREA=0.872ha
LOT 36 AREA=0.854ha
LOT 37 AREA=0.510ha
LOT 38 AREA=0.413ha
LOT 39 AREA=0.492ha
LOT 40 AREA=0.567ha
LOT 41 AREA=0.909ha
LOT 42 AREA=0.527ha
LOT 43 AREA=0.546ha
LOT 44 AREA=0.721ha
LOT 45 AREA=0.624ha
LOT 46 AREA=0.615ha
LOT 47 AREA=0.628ha
LOT 48 AREA=0.610ha
LOT 49 AREA=0.601ha
LOT 50 AREA=0.990ha
LOT 51 AREA=0.689ha
LOT 52 AREA=0.437ha
LOT 53 AREA=0.636ha
LOT 54 AREA=0.641ha
LOT 55 AREA=0.664ha
LOT 56 AREA=0.513ha
LOT 57 AREA=0.437ha
LOT 58 AREA=0.436ha
LOT 59 AREA=0.423ha

STREET 'A'
STREET 'B'
STREET 'C'
STREET 'D'

OPEN SPACE BLOCK 62 AREA=4.115ha
OPEN SPACE BLOCK 63 AREA=6.327ha
OPEN SPACE
BLK 61 AREA=0.476ha
BLOCK 60

WETLAND
WETLAND BOUNDARY
30m WETLAND BUFFER



KEY PLAN
NOT TO SCALE

NO.	DATE	REVISION	BY

REVISIONS

JEFFERY SUBDIVISION – BOBCAYGEON

PROPOSED LOT CONCEPT

D.G. Biddle & Associates Limited
consulting engineers and planners
96 KING STREET EAST • OSHAWA,ON L1H 1B6
PHONE (905)576-8500 • FAX (905)576-9730
info@dgbiddle.com

SCALE:	1:1500	PROJECT NO. 122169
DRAWN BY:	B.B.	DRAWING NO. CP-1
DESIGN BY:	M.J.H.	
CHECKED BY:	M.B.C.	
DATE:	JAN 2024	

X:\STAFF\JOB FILES\122000\122169 JEFFERY - BOBCAYGEON\122169 DRAWINGS CIVIL\122169 CONCEPTUAL DEVELOPMENT AND PRELIMINARY ENGINEERING\122169-20-LOT PLAN-4.DWG
19/01/2024

Appendix B – Traffic Data

Turning Movement Count (2 . MOON LINE ROAD N & RANCH ROAD)

Start Time	Southbound MOON LINE RD N					Northbound MOON LINE RD N					Eastbound RANCH RD					Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	UTurn N:N	Peds N:	Approach Total	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
07:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
07:30:00	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	
07:45:00	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	2
08:00:00	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	2	4
08:15:00	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	5
08:30:00	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	4
08:45:00	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	4
09:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2
09:15:00	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1	2
09:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
09:45:00	0	0	0	0	0	0	0	1	0	1	0	0	0	1	0	1	2
BREAK																	
16:00:00	0	0	0	0	0	1	0	1	0	2	0	0	0	0	0	2	
16:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
16:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
16:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
17:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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17:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
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18:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
18:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	2	1	0	3	3	2	3	1	8	0	0	0	3	0	**11**	-
Approach%	0%	66.7%	33.3%		-	37.5%	25%	37.5%		-	0%	0%	0%		-	**-**	-
Totals %	0%	18.2%	9.1%		27.3%	27.3%	18.2%	27.3%		72.7%	0%	0%	0%		0%	**-**	-
Heavy	0	0	1		-	0	1	1		-	0	0	0		-	**-**	-
Heavy %	0%	0%	100%		-	0%	50%	33.3%		-	0%	0%	0%		-	**-**	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-

NexTrans
SUITE 204 15260 YONGE ST
AURORA ONTARIO, L4G 1N4
CANADA

Peak Hour: 07:30 AM - 08:30 AM Weather: Overcast Clouds (-4 °C)

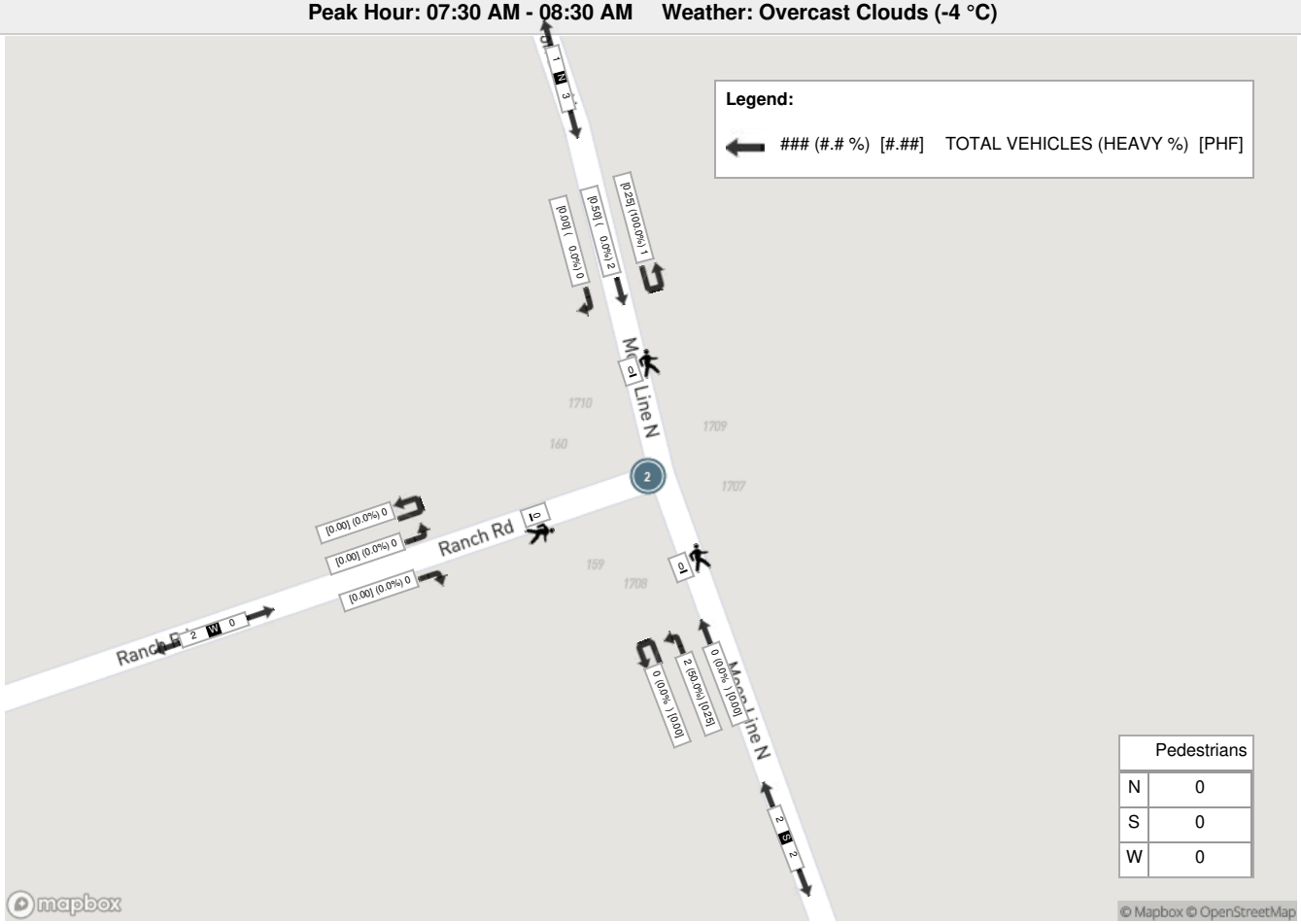
Start Time	Southbound MOON LINE RD N					Northbound MOON LINE RD N					Eastbound RANCH RD					Int. Total (15 min)
	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	
07:30:00	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
07:45:00	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
08:00:00	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	2
08:15:00	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Grand Total	0	2	1	0	3	0	2	0	0	2	0	0	0	0	0	**5**
Approach%	0%	66.7%	33.3%		-	0%	100%	0%		-	0%	0%	0%		-	**-**
Totals %	0%	40%	20%		60%	0%	40%	0%		40%	0%	0%	0%		0%	**-**
PHF	0	0.5	0.25		0.75	0	0.25	0		0.25	0	0	0		0	**-**
Heavy	0	0	1		1	0	1	0		1	0	0	0		0	**-**
Heavy %	0%	0%	100%		33.3%	0%	50%	0%		50%	0%	0%	0%		0%	**-**
Lights	0	2	0		2	0	1	0		1	0	0	0		0	**-**
Lights %	0%	100%	0%		66.7%	0%	50%	0%		50%	0%	0%	0%		0%	**-**
Single-Unit Trucks	0	0	1		1	0	1	0		1	0	0	0		0	**-**
Single-Unit Trucks %	0%	0%	100%		33.3%	0%	50%	0%		50%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**

NexTrans
SUITE 204 15260 YONGE ST
AURORA ONTARIO, L4G 1N4
CANADA

Peak Hour: 04:00 PM - 05:00 PM Weather: Snow (-2.13 °C)

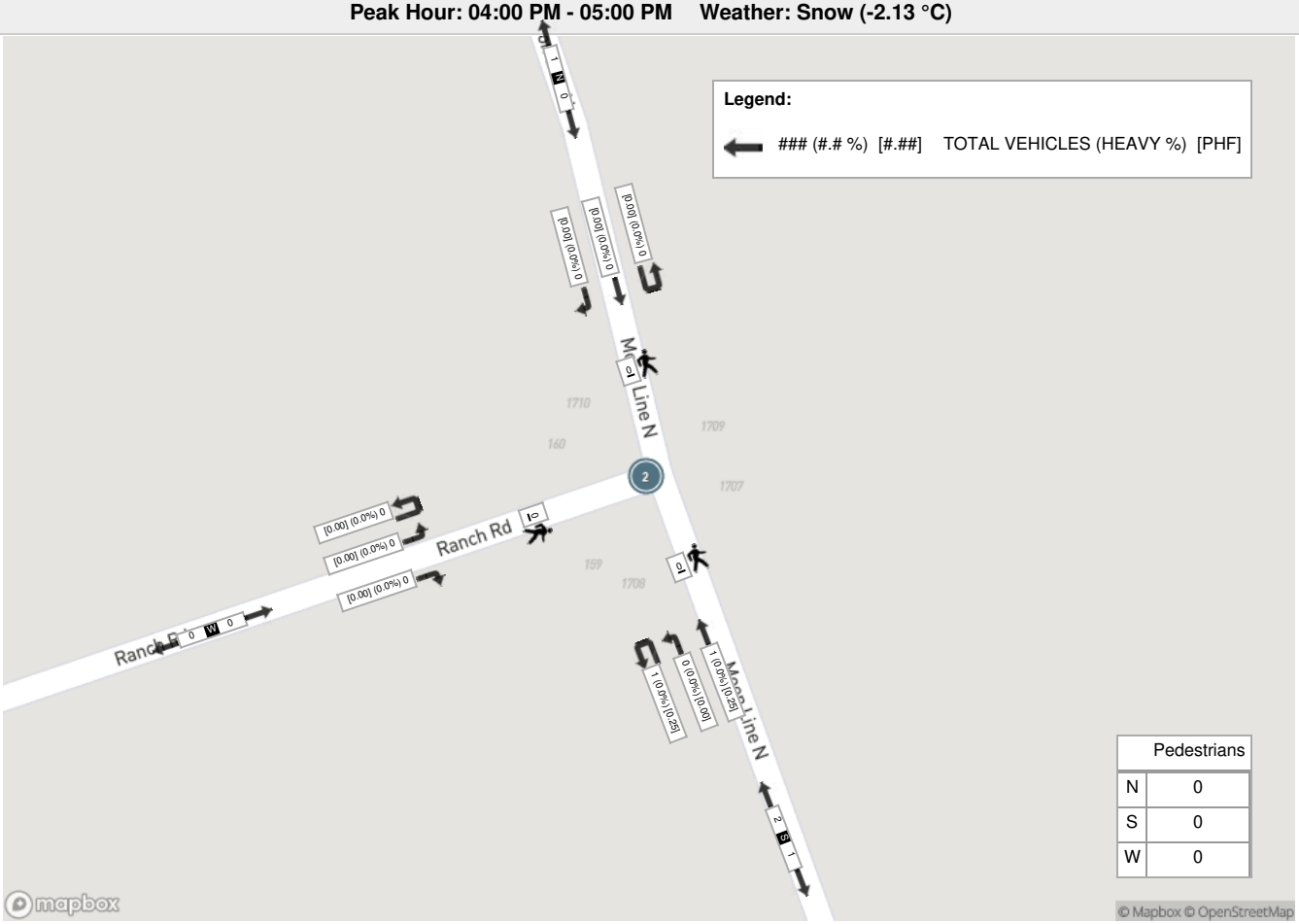
Start Time	Southbound MOON LINE RD N					Northbound MOON LINE RD N					Eastbound RANCH RD					Int. Total (15 min)
	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	
16:00:00	0	0	0	0	0	1	0	1	0	2	0	0	0	0	0	2
16:15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	1	0	1	0	2	0	0	0	0	0	**2**
Approach%	0%	0%	0%		-	50%	0%	50%		-	0%	0%	0%		-	**-**
Totals %	0%	0%	0%		0%	50%	0%	50%		100%	0%	0%	0%		0%	**-**
PHF	0	0	0		0	0.25	0	0.25		0.25	0	0	0		0	**-**
Heavy	0	0	0		0	0	0	0		0	0	0	0		0	**-**
Heavy %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	**-**
Lights	0	0	0		0	1	0	1		2	0	0	0		0	**-**
Lights %	0%	0%	0%		0%	100%	0%	100%		100%	0%	0%	0%		0%	**-**
Single-Unit Trucks	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%	**-**
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**

Peak Hour: 07:30 AM - 08:30 AM Weather: Overcast Clouds (-4 °C)



NexTrans
SUITE 204 15260 YONGE ST
AURORA ONTARIO, L4G 1N4
CANADA

Peak Hour: 04:00 PM - 05:00 PM Weather: Snow (-2.13 °C)



Spectrum

Turning Movement Count
Location Name: COUNTY RD 49 & ANDERSON LINE / RANCH RD
Date: Wed, Nov 15, 2023 Deployment Lead: David Chu

NexTrans
SUITE 204 15260 YONGE ST
AURORA ONTARIO, L4G 1N4
CANADA

Turning Movement Count (1 . COUNTY RD 49 & ANDERSON LINE / RANCH RD)

Start Time	Southbound COUNTY RD 49						Westbound RANCH RD						Northbound COUNTY RD 49						Eastbound ANDERSON LINE						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	2	16	0	0	0	18	0	0	0	0	0	0	0	19	0	0	0	19	0	0	1	0	0	1	38	
07:15:00	0	25	0	0	0	25	0	0	0	0	0	0	0	14	1	0	0	15	0	0	0	0	0	0	40	
07:30:00	0	23	0	0	0	23	0	0	0	0	0	0	0	29	0	0	0	29	0	0	1	0	0	1	53	
07:45:00	0	24	1	0	0	25	0	1	0	1	0	2	0	28	0	0	0	28	3	0	0	0	0	3	58	189
08:00:00	1	23	0	0	0	24	0	1	0	0	0	1	0	27	1	0	0	28	1	0	2	0	0	3	56	207
08:15:00	0	27	0	0	0	27	0	0	0	0	0	0	0	20	1	0	0	21	2	0	0	0	0	2	50	217
08:30:00	0	28	1	0	0	29	0	0	0	0	0	0	0	23	0	0	0	23	1	0	0	0	0	1	53	217
08:45:00	1	24	0	0	0	25	0	0	0	0	0	0	0	22	0	0	0	22	1	1	0	0	0	2	49	208
09:00:00	0	32	1	0	0	33	0	0	0	0	0	0	0	21	1	0	0	22	0	0	0	0	0	0	55	207
09:15:00	0	20	0	0	0	20	0	0	0	0	0	0	1	22	1	0	0	24	0	0	0	0	0	0	44	201
09:30:00	0	14	0	0	0	14	1	0	0	0	0	1	0	17	0	0	0	17	2	0	1	0	0	3	35	183
09:45:00	0	33	0	0	0	33	3	0	0	0	0	3	0	14	1	0	0	15	0	0	1	0	0	1	52	186
BREAK																										
16:00:00	2	36	0	0	0	38	1	0	0	0	0	1	0	23	1	0	0	24	0	0	0	0	0	0	63	
16:15:00	0	23	1	0	0	24	2	0	0	0	0	2	0	30	2	0	0	32	1	0	0	0	0	1	59	
16:30:00	0	31	0	0	0	31	0	0	1	0	0	1	0	26	1	0	0	27	1	0	0	0	0	1	60	
16:45:00	0	20	0	0	0	20	1	0	0	0	0	1	0	39	1	0	0	40	1	0	0	0	0	1	62	244
17:00:00	1	32	3	0	0	36	1	0	1	0	0	2	0	26	1	0	0	27	2	1	0	0	0	3	68	249
17:15:00	0	24	1	0	0	25	2	0	0	0	0	2	0	18	2	0	0	20	2	0	2	0	0	4	51	241
17:30:00	2	24	0	0	0	26	0	1	0	0	0	1	0	18	1	0	0	19	3	0	1	0	0	4	50	231
17:45:00	3	33	0	0	0	36	0	0	0	0	0	0	0	21	3	0	0	24	0	0	0	0	0	0	60	229
18:00:00	0	13	0	0	0	13	1	0	0	0	0	1	0	27	2	0	0	29	0	0	0	0	0	0	43	204
18:15:00	0	9	0	0	0	9	0	0	0	0	0	0	0	17	0	0	0	17	1	0	0	0	0	1	27	180
18:30:00	0	16	0	0	0	16	0	0	0	0	0	0	0	13	0	0	0	13	1	1	0	0	0	2	31	161
18:45:00	0	11	0	0	0	11	0	0	0	0	0	0	0	7	2	0	0	9	1	0	0	0	0	1	21	122
Grand Total	12	561	8	0	0	581	12	3	2	1	0	18	1	521	22	0	0	544	23	3	9	0	0	35	**1178**	-
Approach%	2.1%	96.6%	1.4%	0%		-	66.7%	16.7%	11.1%	5.6%		-	0.2%	95.8%	4%	0%		-	65.7%	8.6%	25.7%	0%		-	**-**	-
Totals %	1%	47.6%	0.7%	0%		49.3%	1%	0.3%	0.2%	0.1%		1.5%	0.1%	44.2%	1.9%	0%		46.2%	2%	0.3%	0.8%	0%		3%	**-**	-
Heavy	2	39	0	0		-	0	0	0	0		-	0	38	0	0		-	0	0	0	0		-	**-**	-
Heavy %	16.7%	7%	0%	0%		-	0%	0%	0%	0%		-	0%	7.3%	0%	0%		-	0%	0%	0%	0%		-	**-**	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	**-**	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	**-**	-

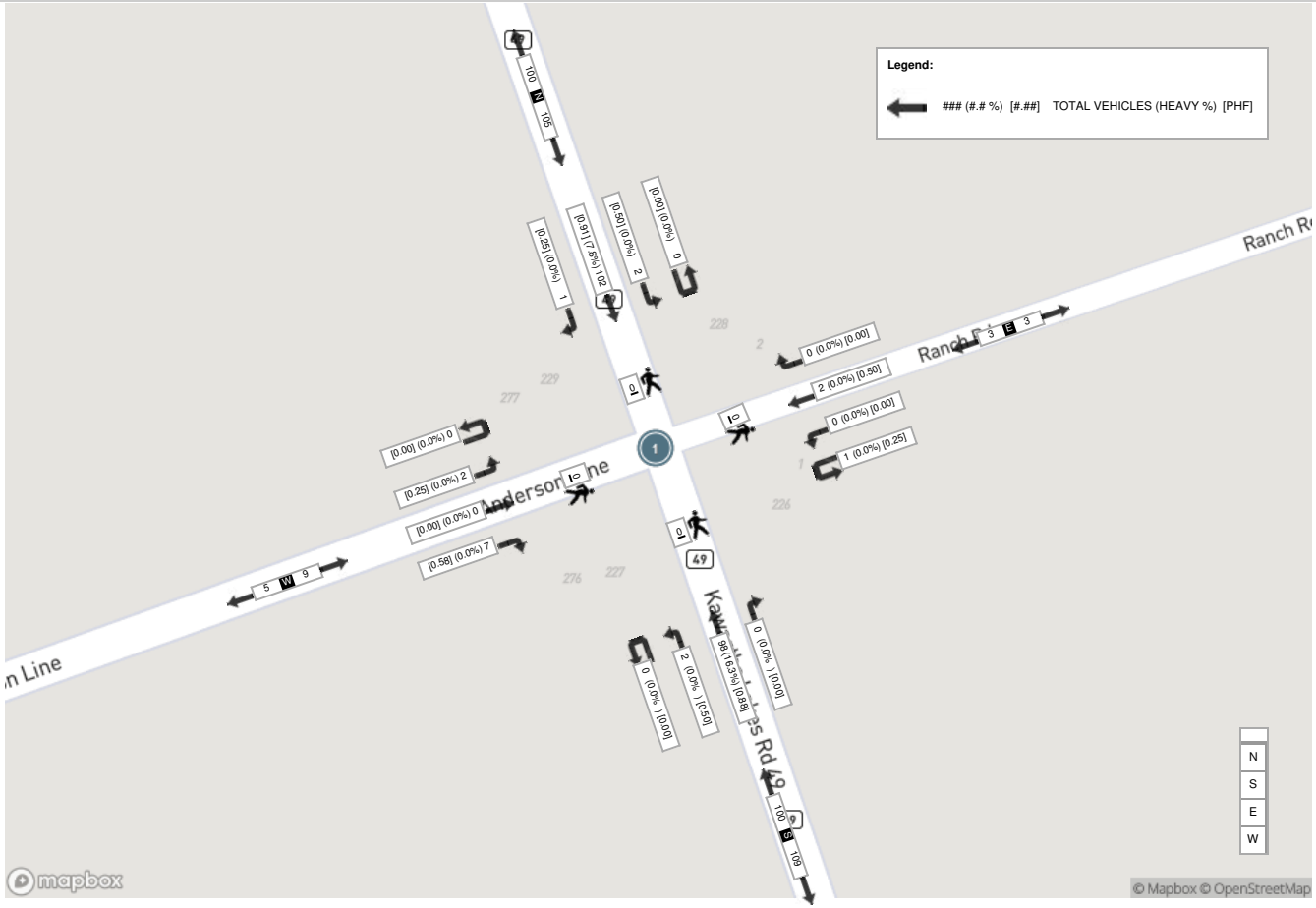
Peak Hour: 07:45 AM - 08:45 AM **Weather: Overcast Clouds (1.38 °C)**

Start Time	Southbound COUNTY RD 49						Westbound RANCH RD						Northbound COUNTY RD 49						Eastbound ANDERSON LINE						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
07:45:00	0	24	1	0	0	25	0	1	0	1	0	2	0	28	0	0	0	28	3	0	0	0	0	3	58
08:00:00	1	23	0	0	0	24	0	1	0	0	0	1	0	27	1	0	0	28	1	0	2	0	0	3	56
08:15:00	0	27	0	0	0	27	0	0	0	0	0	0	0	20	1	0	0	21	2	0	0	0	0	2	50
08:30:00	0	28	1	0	0	29	0	0	0	0	0	0	0	23	0	0	0	23	1	0	0	0	0	1	53
Grand Total	1	102	2	0	0	105	0	2	0	1	0	3	0	98	2	0	0	100	7	0	2	0	0	9	**217**
Approach%	1%	97.1%	1.9%	0%		-	0%	66.7%	0%	33.3%		-	0%	98%	2%	0%		-	77.8%	0%	22.2%	0%		-	**-**
Totals %	0.5%	47%	0.9%	0%		48.4%	0%	0.9%	0%	0.5%		1.4%	0%	45.2%	0.9%	0%		46.1%	3.2%	0%	0.9%	0%		4.1%	**-**
PHF	0.25	0.91	0.5	0		0.91	0	0.5	0	0.25		0.38	0	0.88	0.5	0		0.89	0.58	0	0.25	0		0.75	**-**
Heavy	0	8	0	0		8	0	0	0	0		0	0	16	0	0		16	0	0	0	0		0	**-**
Heavy %	0%	7.8%	0%	0%		7.6%	0%	0%	0%	0%		0%	0%	16.3%	0%	0%		16%	0%	0%	0%	0%		0%	**-**
Lights	1	94	2	0		97	0	2	0	1		3	0	82	2	0		84	7	0	2	0		9	**-**
Lights %	100%	92.2%	100%	0%		92.4%	0%	100%	0%	100%		100%	0%	83.7%	100%	0%		84%	100%	0%	100%	0%		100%	**-**
Single-Unit Trucks	0	5	0	0		5	0	0	0	0		0	0	13	0	0		13	0	0	0	0		0	**-**
Single-Unit Trucks %	0%	4.9%	0%	0%		4.8%	0%	0%	0%	0%		0%	0%	13.3%	0%	0%		13%	0%	0%	0%	0%		0%	**-**
Buses	0	2	0	0		2	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	**-**
Buses %	0%	2%	0%	0%		1.9%	0%	0%	0%	0%		0%	0%	1%	0%	0%		1%	0%	0%	0%	0%		0%	**-**
Articulated Trucks	0	1	0	0		1	0	0	0	0		0	0	2	0	0		2	0	0	0	0		0	**-**
Articulated Trucks %	0%	1%	0%	0%		1%	0%	0%	0%	0%		0%	0%	2%	0%	0%		2%	0%	0%	0%	0%		0%	**-**

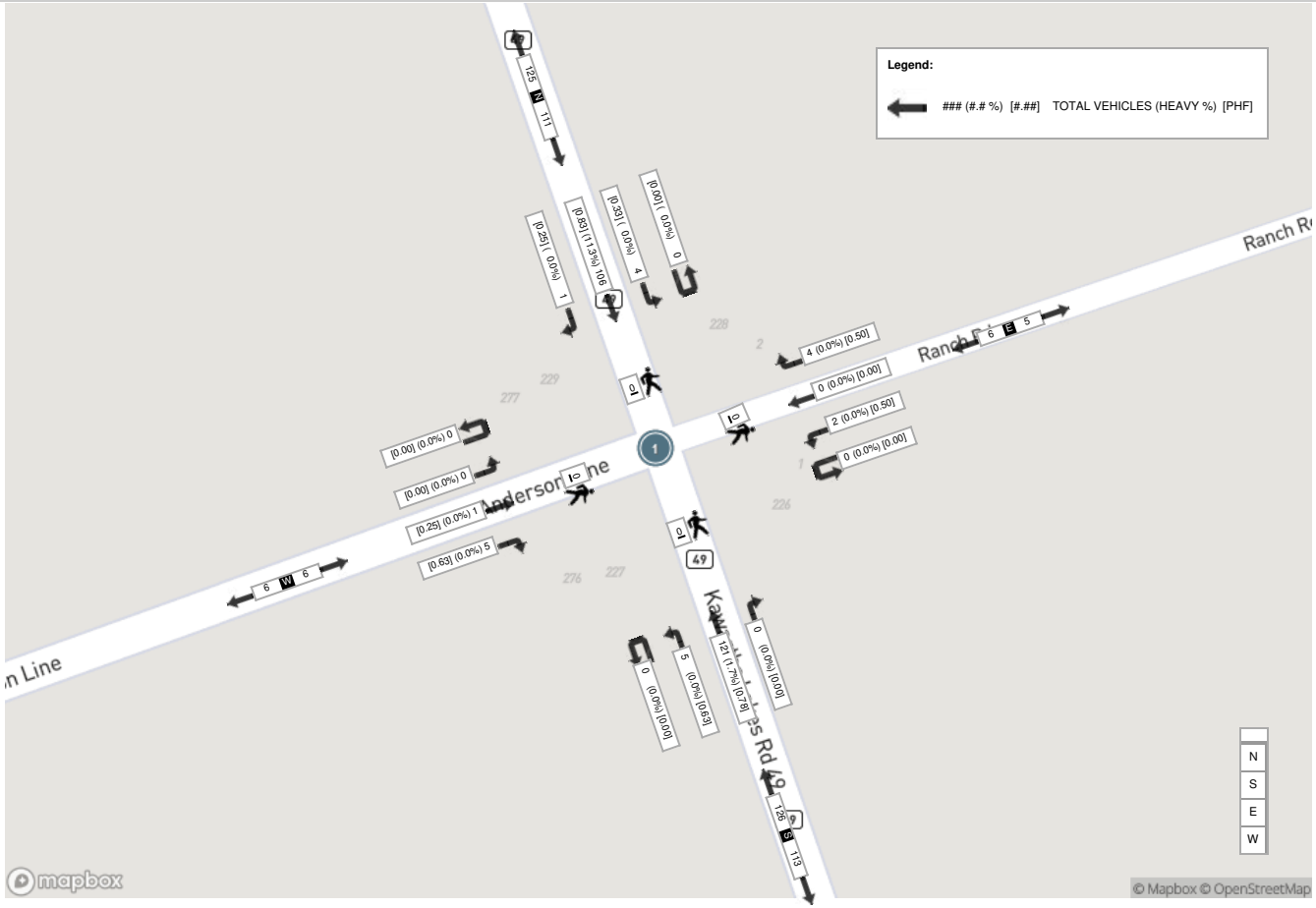
Peak Hour: 04:15 PM - 05:15 PM Weather: Overcast Clouds (10.73 °C)

Start Time	Southbound COUNTY RD 49						Westbound RANCH RD						Northbound COUNTY RD 49						Eastbound ANDERSON LINE						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
16:15:00	0	23	1	0	0	24	2	0	0	0	0	2	0	30	2	0	0	32	1	0	0	0	0	1	59
16:30:00	0	31	0	0	0	31	0	0	1	0	0	1	0	26	1	0	0	27	1	0	0	0	0	1	60
16:45:00	0	20	0	0	0	20	1	0	0	0	0	1	0	39	1	0	0	40	1	0	0	0	0	1	62
17:00:00	1	32	3	0	0	36	1	0	1	0	0	2	0	26	1	0	0	27	2	1	0	0	0	3	68
Grand Total	1	106	4	0	0	111	4	0	2	0	0	6	0	121	5	0	0	126	5	1	0	0	0	6	**249**
Approach%	0.9%	95.5%	3.6%	0%		-	66.7%	0%	33.3%	0%		-	0%	96%	4%	0%		-	83.3%	16.7%	0%	0%		-	-
Totals %	0.4%	42.6%	1.6%	0%		44.6%	1.6%	0%	0.8%	0%		2.4%	0%	48.6%	2%	0%		50.6%	2%	0.4%	0%	0%		2.4%	-
PHF	0.25	0.83	0.33	0		0.77	0.5	0	0.5	0		0.75	0	0.78	0.63	0		0.79	0.63	0.25	0	0		0.5	-
Heavy	0	12	0	0		12	0	0	0	0		0	0	2	0	0		2	0	0	0	0		0	-
Heavy %	0%	11.3%	0%	0%		10.8%	0%	0%	0%	0%		0%	0%	1.7%	0%	0%		1.6%	0%	0%	0%	0%		0%	-
Lights	1	94	4	0		99	4	0	2	0		6	0	119	5	0		124	5	1	0	0		6	-
Lights %	100%	88.7%	100%	0%		89.2%	100%	0%	100%	0%		100%	0%	98.3%	100%	0%		98.4%	100%	100%	0%	0%		100%	-
Single-Unit Trucks	0	9	0	0		9	0	0	0	0		0	0	2	0	0		2	0	0	0	0		0	-
Single-Unit Trucks %	0%	8.5%	0%	0%		8.1%	0%	0%	0%	0%		0%	0%	1.7%	0%	0%		1.6%	0%	0%	0%	0%		0%	-
Buses	0	3	0	0		3	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Buses %	0%	2.8%	0%	0%		2.7%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-

Peak Hour: 07:45 AM - 08:45 AM **Weather: Overcast Clouds (1.38 °C)**



Peak Hour: 04:15 PM - 05:15 PM Weather: Overcast Clouds (10.73 °C)



Spectrum

Turning Movement Count
Location Name: COUNTY RD 49 & COUNTY RD 36
Date: Wed, Nov 15, 2023 Deployment Lead: David Chu

NexTrans
SUITE 204 15260 YONGE ST
AURORA ONTARIO, L4G 1N4
CANADA

Turning Movement Count (2 . COUNTY RD 49 & COUNTY RD 36)

Start Time	Southbound COUNTY RD 49						Westbound COUNTY RD 36						Northbound COUNTY RD 49						Eastbound COUNTY RD 36						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	2	20	0	0	0	22	1	7	21	0	0	29	16	16	0	0	0	32	1	9	6	0	0	16	99	
07:15:00	3	18	1	0	0	22	1	14	18	0	0	33	20	17	0	0	1	37	0	9	1	0	0	10	102	
07:30:00	4	24	0	0	0	28	4	17	28	0	0	49	22	27	0	0	0	49	1	9	6	0	0	16	142	
07:45:00	4	35	3	0	0	42	4	13	25	0	0	42	18	30	1	0	0	49	2	14	2	0	0	18	151	494
08:00:00	0	26	3	0	0	29	6	19	31	0	0	56	20	28	0	0	0	48	3	13	5	0	0	21	154	549
08:15:00	4	23	3	0	0	30	3	17	38	0	0	58	22	26	0	0	0	48	1	16	0	0	0	17	153	600
08:30:00	4	24	2	0	0	30	5	12	32	0	0	49	20	20	2	0	0	42	0	20	8	0	0	28	149	607
08:45:00	7	30	0	0	0	37	4	21	42	0	0	67	27	18	2	0	0	47	3	10	9	0	0	22	173	629
09:00:00	5	45	6	0	0	56	7	22	25	0	2	54	36	29	2	0	0	67	0	17	8	0	0	25	202	677
09:15:00	4	28	3	0	0	35	1	18	33	0	0	52	26	24	2	0	0	52	2	15	4	0	0	21	160	684
09:30:00	4	19	2	0	0	25	3	14	17	0	0	34	18	17	0	0	0	35	0	7	3	0	0	10	104	639
09:45:00	3	28	5	0	0	36	2	14	31	0	0	47	28	13	1	0	1	42	2	15	4	0	0	21	146	612
BREAK																										
16:00:00	6	34	3	0	0	43	3	11	33	0	0	47	40	25	2	0	0	67	1	19	6	0	0	26	183	
16:15:00	4	28	3	0	0	35	1	22	32	0	0	55	29	40	0	0	0	69	1	18	6	0	0	25	184	
16:30:00	5	31	3	0	1	39	4	21	42	0	0	67	38	24	2	0	0	64	0	15	4	0	0	19	189	
16:45:00	4	29	4	0	0	37	3	19	34	0	0	56	38	40	0	0	0	78	3	19	8	0	0	30	201	757
17:00:00	6	31	4	0	0	41	8	19	28	0	0	55	35	36	0	0	0	71	3	9	3	0	0	15	182	756
17:15:00	6	23	1	0	0	30	1	18	24	0	0	43	37	33	0	0	0	70	0	24	1	0	0	25	168	740
17:30:00	7	29	2	0	0	38	1	16	16	0	0	33	27	28	0	0	0	55	1	13	2	0	0	16	142	693
17:45:00	2	22	6	0	0	30	1	16	25	0	0	42	21	21	1	0	0	43	0	14	2	0	0	16	131	623
18:00:00	3	16	2	0	0	21	5	10	16	0	0	31	35	20	3	0	0	58	0	8	4	0	0	12	122	563
18:15:00	2	13	3	0	0	18	3	10	23	0	0	36	12	17	1	0	0	30	0	14	4	0	0	18	102	497
18:30:00	2	16	0	0	0	18	2	5	16	0	0	23	18	14	1	0	0	33	1	5	2	0	0	8	82	437
18:45:00	3	13	0	0	0	16	2	1	13	0	0	16	17	8	1	0	0	26	0	9	6	0	0	15	73	379
Grand Total	94	605	59	0	1	758	75	356	643	0	2	1074	620	571	21	0	2	1212	25	321	104	0	0	450	**3494**	-
Approach%	12.4%	79.8%	7.8%	0%		-	7%	33.1%	59.9%	0%		-	51.2%	47.1%	1.7%	0%		-	5.6%	71.3%	23.1%	0%		-	-	-
Totals %	2.7%	17.3%	1.7%	0%		21.7%	2.1%	10.2%	18.4%	0%		30.7%	17.7%	16.3%	0.6%	0%		34.7%	0.7%	9.2%	3%	0%		12.9%	-	-
Heavy	0	37	8	0		-	8	8	47	0		-	34	40	0	0		-	0	10	2	0		-	-	-
Heavy %	0%	6.1%	13.6%	0%		-	10.7%	2.2%	7.3%	0%		-	5.5%	7%	0%	0%		-	0%	3.1%	1.9%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

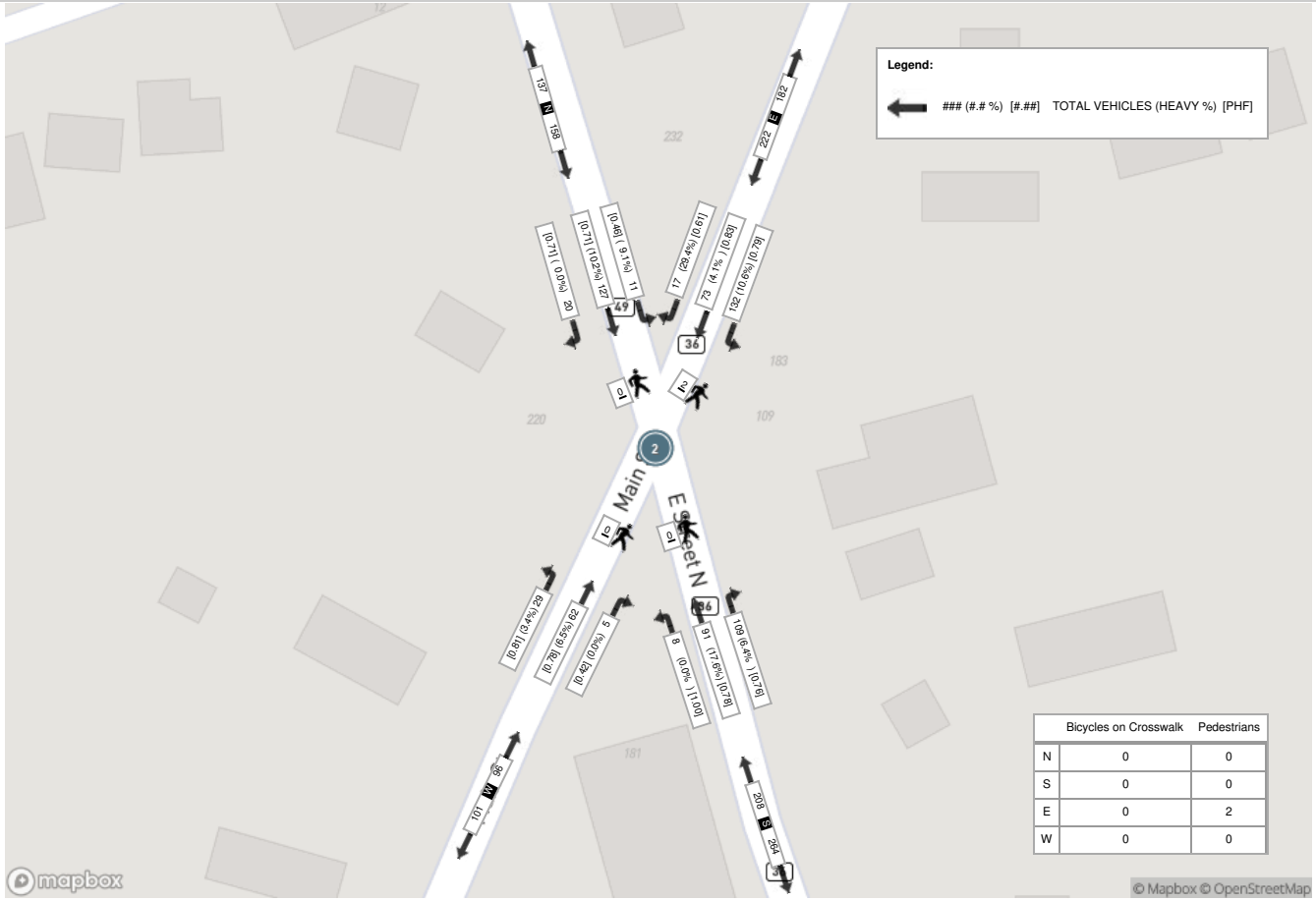
Peak Hour: 08:30 AM - 09:30 AM Weather: Overcast Clouds (1.38 °C)

Start Time	Southbound COUNTY RD 49						Westbound COUNTY RD 36						Northbound COUNTY RD 49						Eastbound COUNTY RD 36						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
08:30:00	4	24	2	0	0	30	5	12	32	0	0	49	20	20	2	0	0	42	0	20	8	0	0	28	149
08:45:00	7	30	0	0	0	37	4	21	42	0	0	67	27	18	2	0	0	47	3	10	9	0	0	22	173
09:00:00	5	45	6	0	0	56	7	22	25	0	2	54	36	29	2	0	0	67	0	17	8	0	0	25	202
09:15:00	4	28	3	0	0	35	1	18	33	0	0	52	26	24	2	0	0	52	2	15	4	0	0	21	160
Grand Total	20	127	11	0	0	158	17	73	132	0	2	222	109	91	8	0	0	208	5	62	29	0	0	96	**684**
Approach%	12.7%	80.4%	7%	0%		-	7.7%	32.9%	59.5%	0%		-	52.4%	43.8%	3.8%	0%		-	5.2%	64.6%	30.2%	0%		-	-
Totals %	2.9%	18.6%	1.6%	0%		23.1%	2.5%	10.7%	19.3%	0%		32.5%	15.9%	13.3%	1.2%	0%		30.4%	0.7%	9.1%	4.2%	0%		14%	-
PHF	0.71	0.71	0.46	0		0.71	0.61	0.83	0.79	0		0.83	0.76	0.78	1	0		0.78	0.42	0.78	0.81	0		0.86	-
Heavy	0	13	1	0		14	5	3	14	0		22	7	16	0	0		23	0	4	1	0		5	-
Heavy %	0%	10.2%	9.1%	0%		8.9%	29.4%	4.1%	10.6%	0%		9.9%	6.4%	17.6%	0%	0%		11.1%	0%	6.5%	3.4%	0%		5.2%	-
Lights	20	114	10	0		144	12	70	118	0		200	102	75	8	0		185	4	58	28	0		90	-
Lights %	100%	89.8%	90.9%	0%		91.1%	70.6%	95.9%	89.4%	0%		90.1%	93.6%	82.4%	100%	0%		88.9%	80%	93.5%	96.6%	0%		93.8%	-
Single-Unit Trucks	0	5	1	0		6	3	2	8	0		13	4	15	0	0		19	0	4	0	0		4	-
Single-Unit Trucks %	0%	3.9%	9.1%	0%		3.8%	17.6%	2.7%	6.1%	0%		5.9%	3.7%	16.5%	0%	0%		9.1%	0%	6.5%	0%	0%		4.2%	-
Buses	0	8	0	0		8	2	0	0	0		2	0	1	0	0		1	0	0	1	0		1	-
Buses %	0%	6.3%	0%	0%		5.1%	11.8%	0%	0%	0%		0.9%	0%	1.1%	0%	0%		0.5%	0%	0%	3.4%	0%		1%	-
Articulated Trucks	0	0	0	0		0	0	1	6	0		7	3	0	0	0		3	0	0	0	0		0	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	1.4%	4.5%	0%		3.2%	2.8%	0%	0%	0%		1.4%	0%	0%	0%	0%		0%	-
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	1	0	0	0		1	-
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	20%	0%	0%	0%		1%	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Pedestrians%	-	-	-	-	0%		-	-	-	-	100%		-	-	-	-	0%		-	-	-	-	0%		-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-

Peak Hour: 04:00 PM - 05:00 PM Weather: Overcast Clouds (10.73 °C)

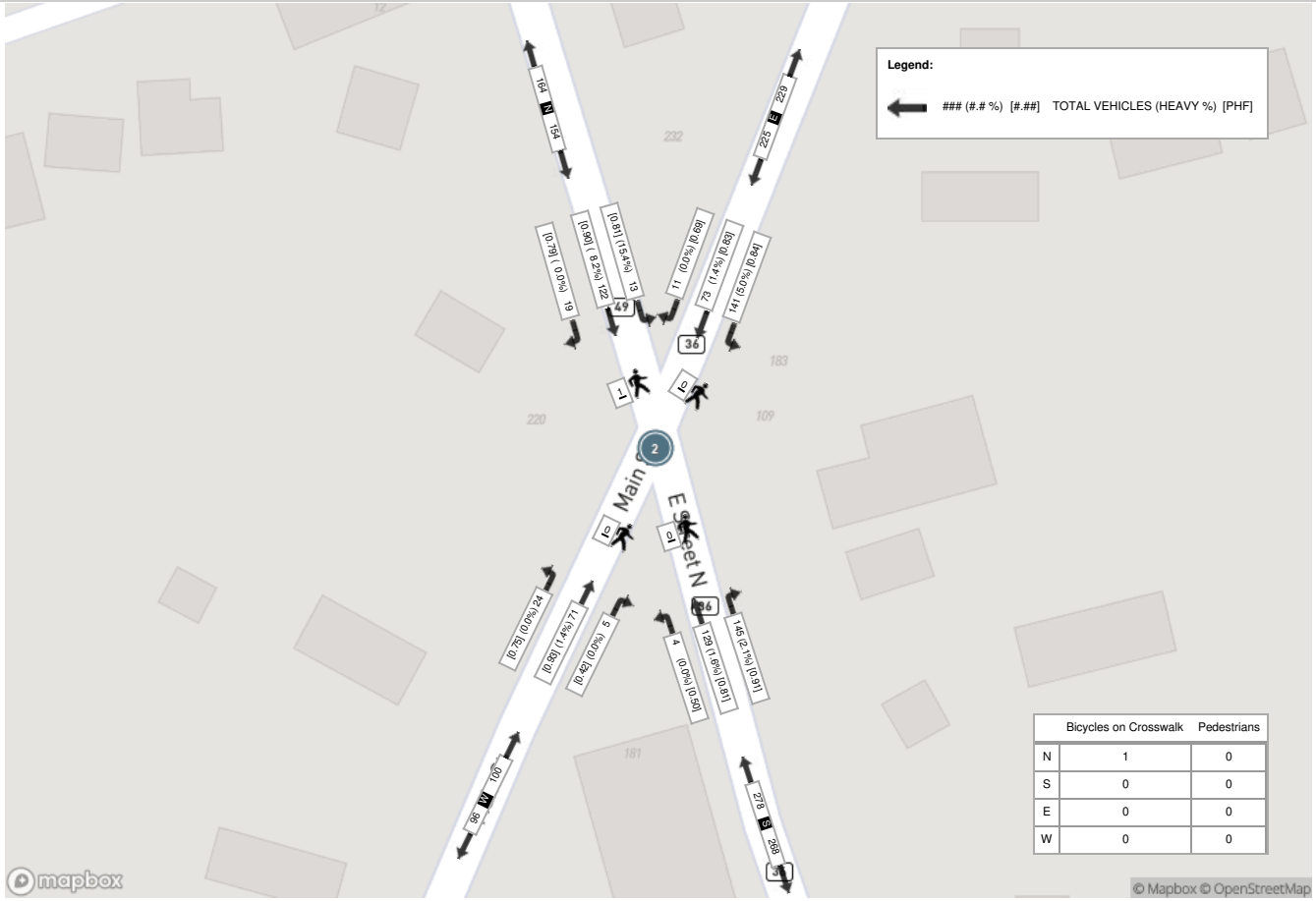
Start Time	Southbound COUNTY RD 49						Westbound COUNTY RD 36						Northbound COUNTY RD 49						Eastbound COUNTY RD 36						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
16:00:00	6	34	3	0	0	43	3	11	33	0	0	47	40	25	2	0	0	67	1	19	6	0	0	26	183
16:15:00	4	28	3	0	0	35	1	22	32	0	0	55	29	40	0	0	0	69	1	18	6	0	0	25	184
16:30:00	5	31	3	0	1	39	4	21	42	0	0	67	38	24	2	0	0	64	0	15	4	0	0	19	189
16:45:00	4	29	4	0	0	37	3	19	34	0	0	56	38	40	0	0	0	78	3	19	8	0	0	30	201
Grand Total	19	122	13	0	1	154	11	73	141	0	0	225	145	129	4	0	0	278	5	71	24	0	0	100	**757**
Approach%	12.3%	79.2%	8.4%	0%		-	4.9%	32.4%	62.7%	0%		-	52.2%	46.4%	1.4%	0%		-	5%	71%	24%	0%		-	**-**
Totals %	2.5%	16.1%	1.7%	0%		20.3%	1.5%	9.6%	18.6%	0%		29.7%	19.2%	17%	0.5%	0%		36.7%	0.7%	9.4%	3.2%	0%		13.2%	**-**
PHF	0.79	0.9	0.81	0		0.9	0.69	0.83	0.84	0		0.84	0.91	0.81	0.5	0		0.89	0.42	0.93	0.75	0		0.83	**-**
Heavy	0	10	2	0		12	0	1	7	0		8	3	2	0	0		5	0	1	0	0		1	**-**
Heavy %	0%	8.2%	15.4%	0%		7.8%	0%	1.4%	5%	0%		3.6%	2.1%	1.6%	0%	0%		1.8%	0%	1.4%	0%	0%		1%	**-**
Lights	18	112	11	0		141	11	72	133	0		216	142	127	4	0		273	5	69	24	0		98	**-**
Lights %	94.7%	91.8%	84.6%	0%		91.6%	100%	98.6%	94.3%	0%		96%	97.9%	98.4%	100%	0%		98.2%	100%	97.2%	100%	0%		98%	**-**
Single-Unit Trucks	0	5	2	0		7	0	1	2	0		3	1	1	0	0		2	0	1	0	0		1	**-**
Single-Unit Trucks %	0%	4.1%	15.4%	0%		4.5%	0%	1.4%	1.4%	0%		1.3%	0.7%	0.8%	0%	0%		0.7%	0%	1.4%	0%	0%		1%	**-**
Buses	0	4	0	0		4	0	0	3	0		3	1	1	0	0		2	0	0	0	0		0	**-**
Buses %	0%	3.3%	0%	0%		2.6%	0%	0%	2.1%	0%		1.3%	0.7%	0.8%	0%	0%		0.7%	0%	0%	0%	0%		0%	**-**
Articulated Trucks	0	1	0	0		1	0	0	2	0		2	1	0	0	0		1	0	0	0	0		0	**-**
Articulated Trucks %	0%	0.8%	0%	0%		0.6%	0%	0%	1.4%	0%		0.9%	0.7%	0%	0%	0%		0.4%	0%	0%	0%	0%		0%	**-**
Bicycles on Road	1	0	0	0		1	0	0	1	0		1	0	0	0	0		0	0	1	0	0		1	**-**
Bicycles on Road %	5.3%	0%	0%	0%		0.6%	0%	0%	0.7%	0%		0.4%	0%	0%	0%	0%		0%	0%	1.4%	0%	0%		1%	**-**
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	100%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Peak Hour: 08:30 AM - 09:30 AM Weather: Overcast Clouds (1.38 °C)



	Bicycles on Crosswalk	Pedestrians
N	0	0
S	0	0
E	0	2
W	0	0

Peak Hour: 04:00 PM - 05:00 PM Weather: Overcast Clouds (10.73 °C)



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

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SUITE 204 15260 YONGE ST
AURORA ONTARIO, L4G 1N4
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Turning Movement Count (3 . MOON LINE RD N & MOON LINE RD)

Start Time	Southbound MOON LINE RD N					Westbound MOON LINE RD					Eastbound MOON LINE RD					Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	UTurn E:E	Peds E:	Approach Total	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	0	0	0	0	0	1	0	0	0	1	2	0	0	0	2	3	
07:15:00	3	1	0	0	4	0	0	0	0	0	0	0	0	0	0	4	
07:30:00	2	0	0	0	2	0	1	0	0	1	1	1	0	0	2	5	
07:45:00	3	0	0	0	3	1	0	0	0	1	2	1	0	0	3	7	19
08:00:00	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	2	18
08:15:00	2	0	0	0	2	0	0	0	0	0	1	0	0	0	1	3	17
08:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
08:45:00	1	0	0	0	1	1	0	0	0	1	1	1	0	0	2	4	9
09:00:00	2	0	2	7	4	0	1	0	0	1	0	2	0	0	2	7	14
09:15:00	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	2	13
09:30:00	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1	14
09:45:00	0	1	0	0	1	0	0	0	0	0	1	1	0	0	2	3	13
BREAK																	
16:00:00	1	0	0	0	1	1	0	0	0	1	3	2	0	0	5	7	
16:15:00	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	
16:30:00	0	0	0	0	0	0	0	0	0	0	1	2	0	0	3	3	
16:45:00	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	2	13
17:00:00	1	0	0	0	1	0	1	0	0	1	1	0	0	0	1	3	9
17:15:00	1	0	0	0	1	1	0	0	0	1	0	2	0	0	2	4	12
17:30:00	1	0	0	0	1	0	0	0	0	0	1	1	0	0	2	3	12
17:45:00	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1	2	12
18:00:00	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	10
18:15:00	3	0	0	0	3	0	1	0	0	1	0	0	0	0	0	4	10
18:30:00	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	2	9
18:45:00	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	3	10
Grand Total	23	2	2	7	27	6	7	0	0	13	15	21	0	0	36	**76**	-
Approach%	85.2%	7.4%	7.4%		-	46.2%	53.8%	0%		-	41.7%	58.3%	0%		-	**-**	-
Totals %	30.3%	2.6%	2.6%		35.5%	7.9%	9.2%	0%		17.1%	19.7%	27.6%	0%		47.4%	**-**	-
Heavy	1	0	0		-	2	2	0		-	1	0	0		-	**-**	-
Heavy %	4.3%	0%	0%		-	33.3%	28.6%	0%		-	6.7%	0%	0%		-	**-**	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-

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Peak Hour: 07:00 AM - 08:00 AM Weather: Overcast Clouds (-4 °C)

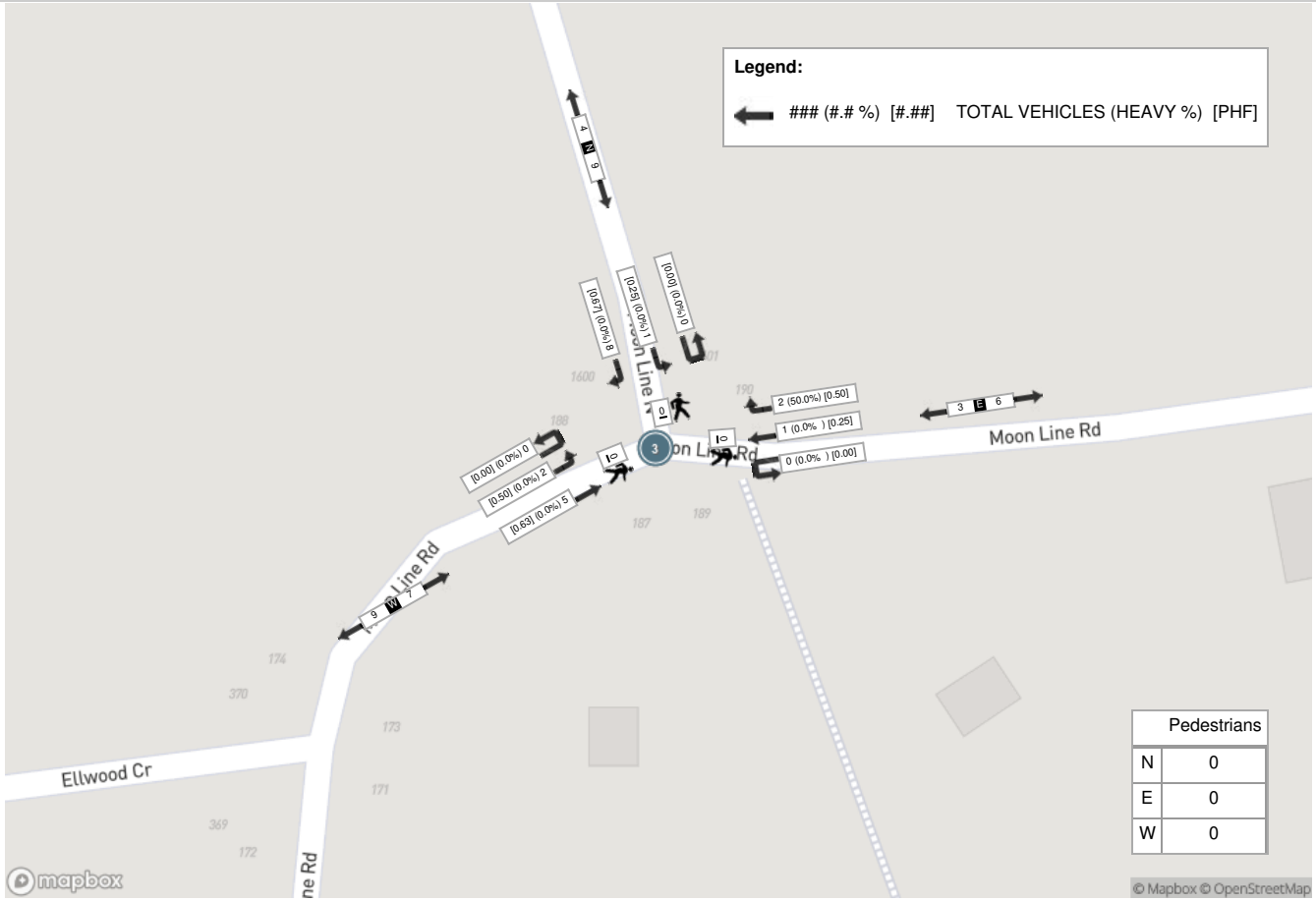
Start Time	Southbound MOON LINE RD N					Westbound MOON LINE RD					Eastbound MOON LINE RD					Int. Total (15 min)
	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	
07:00:00	0	0	0	0	0	1	0	0	0	1	2	0	0	0	2	3
07:15:00	3	1	0	0	4	0	0	0	0	0	0	0	0	0	0	4
07:30:00	2	0	0	0	2	0	1	0	0	1	1	1	0	0	2	5
07:45:00	3	0	0	0	3	1	0	0	0	1	2	1	0	0	3	7
Grand Total	8	1	0	0	9	2	1	0	0	3	5	2	0	0	7	**19**
Approach%	88.9%	11.1%	0%		-	66.7%	33.3%	0%		-	71.4%	28.6%	0%		-	**-**
Totals %	42.1%	5.3%	0%		47.4%	10.5%	5.3%	0%		15.8%	26.3%	10.5%	0%		36.8%	**-**
PHF	0.67	0.25	0		0.56	0.5	0.25	0		0.75	0.63	0.5	0		0.58	**-**
Heavy	0	0	0		0	1	0	0		1	0	0	0		0	**-**
Heavy %	0%	0%	0%		0%	50%	0%	0%		33.3%	0%	0%	0%		0%	**-**
Lights	8	1	0		9	1	1	0		2	5	2	0		7	**-**
Lights %	100%	100%	0%		100%	50%	100%	0%		66.7%	100%	100%	0%		100%	**-**
Single-Unit Trucks	0	0	0		0	1	0	0		1	0	0	0		0	**-**
Single-Unit Trucks %	0%	0%	0%		0%	50%	0%	0%		33.3%	0%	0%	0%		0%	**-**
Buses	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%	**-**
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**

NexTrans
SUITE 204 15260 YONGE ST
AURORA ONTARIO, L4G 1N4
CANADA

Peak Hour: 04:00 PM - 05:00 PM Weather: Snow (-2.13 °C)

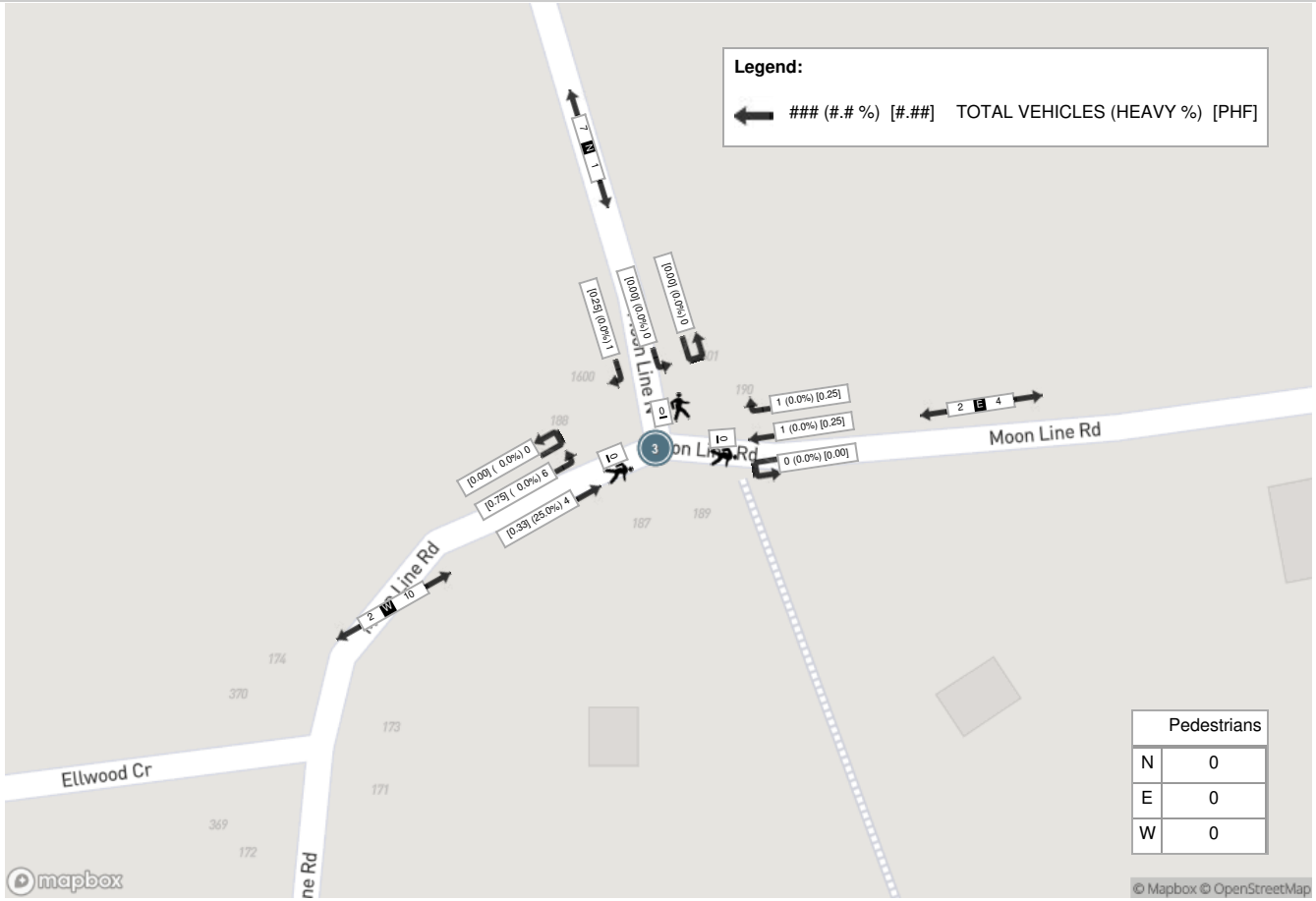
Start Time	Southbound MOON LINE RD N					Westbound MOON LINE RD					Eastbound MOON LINE RD					Int. Total (15 min)
	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	
16:00:00	1	0	0	0	1	1	0	0	0	1	3	2	0	0	5	7
16:15:00	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
16:30:00	0	0	0	0	0	0	0	0	0	0	1	2	0	0	3	3
16:45:00	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	2
Grand Total	1	0	0	0	1	1	1	0	0	2	4	6	0	0	10	**13**
Approach%	100%	0%	0%		-	50%	50%	0%		-	40%	60%	0%		-	**-**
Totals %	7.7%	0%	0%		7.7%	7.7%	7.7%	0%		15.4%	30.8%	46.2%	0%		76.9%	**-**
PHF	0.25	0	0		0.25	0.25	0.25	0		0.5	0.33	0.75	0		0.5	**-**
Heavy	0	0	0		0	0	0	0		0	1	0	0		1	**-**
Heavy %	0%	0%	0%		0%	0%	0%	0%		0%	25%	0%	0%		10%	**-**
Lights	1	0	0		1	1	1	0		2	3	6	0		9	**-**
Lights %	100%	0%	0%		100%	100%	100%	0%		100%	75%	100%	0%		90%	**-**
Single-Unit Trucks	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%	**-**
Buses	0	0	0		0	0	0	0		0	1	0	0		1	**-**
Buses %	0%	0%	0%		0%	0%	0%	0%		0%	25%	0%	0%		10%	**-**
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**

Peak Hour: 07:00 AM - 08:00 AM Weather: Overcast Clouds (-4 °C)

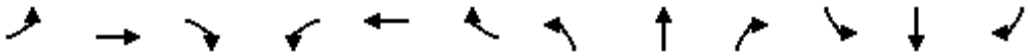


NexTrans
SUITE 204 15260 YONGE ST
AURORA ONTARIO, L4G 1N4
CANADA

Peak Hour: 04:00 PM - 05:00 PM Weather: Snow (-2.13 °C)



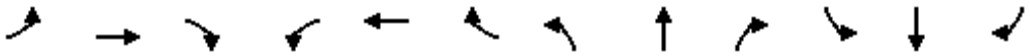
Appendix C – Existing Traffic Conditions – Capacity Analysis Results



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	0	7	0	2	0	2	98	0	2	102	1
Future Volume (Veh/h)	2	0	7	0	2	0	2	98	0	2	102	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	2	0	7	0	2	0	2	104	0	2	109	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	222	222	110	228	222	104	110			104		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	222	222	110	228	222	104	110			104		
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 %	100	100	99	100	100	100	100			100		
cM capacity (veh/h)	734	679	950	724	678	956	1493			1500		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	9	2	106	112
Volume Left	2	0	2	2
Volume Right	7	0	0	1
cSH	891	678	1493	1500
Volume to Capacity	0.01	0.00	0.00	0.00
Queue Length 95th (m)	0.2	0.1	0.0	0.0
Control Delay (s)	9.1	10.3	0.2	0.1
Lane LOS	A	B	A	A
Approach Delay (s)	9.1	10.3	0.2	0.1
Approach LOS	A	B		

Intersection Summary				
Average Delay	0.6			
Intersection Capacity Utilization	16.4%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	29	62	5	132	73	17	8	91	109	11	127	20
Future Volume (vph)	29	62	5	132	73	17	8	91	109	11	127	20
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	34	73	6	155	86	20	9	107	128	13	149	24

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1
Volume Total (vph)	34	79	155	106	116	128	186
Volume Left (vph)	34	0	155	0	9	0	13
Volume Right (vph)	0	6	0	20	0	128	24
Hadj (s)	0.55	0.06	0.69	0.02	0.32	-0.60	0.08
Departure Headway (s)	6.7	6.2	6.6	5.9	6.2	5.3	6.0
Degree Utilization, x	0.06	0.14	0.28	0.17	0.20	0.19	0.31
Capacity (veh/h)	498	539	519	577	551	642	569
Control Delay (s)	8.9	9.0	11.0	9.0	9.5	8.3	11.7
Approach Delay (s)	9.0		10.2		8.9		11.7
Approach LOS	A		B		A		B

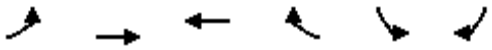
Intersection Summary				
Delay	9.9			
Level of Service	A			
Intersection Capacity Utilization	35.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	10.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	29	62	5	132	73	17	8	91	109	11	127	20
Future Vol, veh/h	29	62	5	132	73	17	8	91	109	11	127	20
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	3	7	0	11	4	29	0	18	6	9	10	0
Mvmt Flow	34	73	6	155	86	20	9	107	128	13	149	24
Number of Lanes	1	1	0	1	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	10	11.1	9.8	11.9
HCM LOS	A	B	A	B

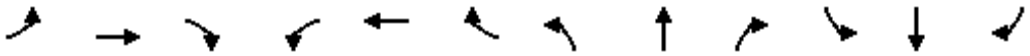
Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	8%	0%	100%	0%	100%	0%	7%
Vol Thru, %	92%	0%	0%	93%	0%	81%	80%
Vol Right, %	0%	100%	0%	7%	0%	19%	13%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	99	109	29	67	132	90	158
LT Vol	8	0	29	0	132	0	11
Through Vol	91	0	0	62	0	73	127
RT Vol	0	109	0	5	0	17	20
Lane Flow Rate	116	128	34	79	155	106	186
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.193	0.197	0.064	0.137	0.286	0.172	0.314
Departure Headway (Hd)	5.957	5.518	6.729	6.237	6.62	5.859	6.082
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	602	650	532	575	544	612	591
Service Time	3.692	3.252	4.469	3.977	4.354	3.593	4.118
HCM Lane V/C Ratio	0.193	0.197	0.064	0.137	0.285	0.173	0.315
HCM Control Delay	10.1	9.6	9.9	10	12	9.8	11.9
HCM Lane LOS	B	A	A	A	B	A	B
HCM 95th-tile Q	0.7	0.7	0.2	0.5	1.2	0.6	1.3



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	5	1	2	1	8
Future Volume (Veh/h)	2	5	1	2	1	8
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68
Hourly flow rate (vph)	3	7	1	3	1	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)						
pX, platoon unblocked						
vC, conflicting volume	4				16	2
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	4				16	2
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	99
cM capacity (veh/h)	1631				1006	1087

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	10	4	13
Volume Left	3	0	1
Volume Right	0	3	12
cSH	1631	1700	1081
Volume to Capacity	0.00	0.00	0.01
Queue Length 95th (m)	0.0	0.0	0.3
Control Delay (s)	2.2	0.0	8.4
Lane LOS	A		A
Approach Delay (s)	2.2	0.0	8.4
Approach LOS			A

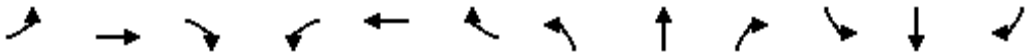
Intersection Summary			
Average Delay	4.8		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	0	0	0	2	0	0	0	2	0
Future Volume (Veh/h)	0	0	0	0	0	0	2	0	0	0	2	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
Hourly flow rate (vph)	0	0	0	0	0	0	3	0	0	0	3	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	9	9	3	9	9	0	3			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	9	9	3	9	9	0	3			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.6			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.7			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	1013	888	1087	1013	888	1091	1355			1636		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	0	3	3
Volume Left	0	0	3	0
Volume Right	0	0	0	0
cSH	1700	1700	1355	1636
Volume to Capacity	0.00	0.00	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.1	0.0
Control Delay (s)	0.0	0.0	7.7	0.0
Lane LOS	A	A	A	
Approach Delay (s)	0.0	0.0	7.7	0.0
Approach LOS	A	A		

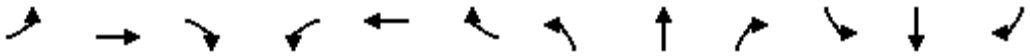
Intersection Summary				
Average Delay	3.8			
Intersection Capacity Utilization	6.7%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1	5	2	0	4	5	121	0	4	106	1
Future Volume (Veh/h)	0	1	5	2	0	4	5	121	0	4	106	1
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)	0	1	5	2	0	4	5	132	0	4	115	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	270	266	116	271	266	132	116			132		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	270	266	116	271	266	132	116			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 %	100	100	99	100	100	100	100			100		
cM capacity (veh/h)	681	640	942	678	639	923	1485			1466		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	6	6	137	120
Volume Left	0	2	5	4
Volume Right	5	4	0	1
cSH	873	824	1485	1466
Volume to Capacity	0.01	0.01	0.00	0.00
Queue Length 95th (m)	0.2	0.2	0.1	0.1
Control Delay (s)	9.2	9.4	0.3	0.3
Lane LOS	A	A	A	A
Approach Delay (s)	9.2	9.4	0.3	0.3
Approach LOS	A	A		

Intersection Summary				
Average Delay	0.7			
Intersection Capacity Utilization	18.4%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	24	71	5	141	73	11	4	129	145	13	122	19
Future Volume (vph)	24	71	5	141	73	11	4	129	145	13	122	19
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	26	76	5	150	78	12	4	137	154	14	130	20

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1
Volume Total (vph)	26	81	150	90	141	154	164
Volume Left (vph)	26	0	150	0	4	0	14
Volume Right (vph)	0	5	0	12	0	154	20
Hadj (s)	0.50	-0.03	0.58	-0.08	0.05	-0.67	0.07
Departure Headway (s)	6.6	6.1	6.5	5.8	5.8	5.1	5.9
Degree Utilization, x	0.05	0.14	0.27	0.15	0.23	0.22	0.27
Capacity (veh/h)	501	546	525	583	593	671	572
Control Delay (s)	8.8	8.9	10.7	8.6	9.3	8.3	11.1
Approach Delay (s)	8.8		9.9		8.8		11.1
Approach LOS	A		A		A		B

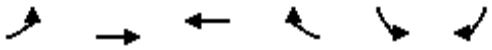
Intersection Summary				
Delay	9.6			
Level of Service	A			
Intersection Capacity Utilization	39.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	10.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	24	71	5	141	73	11	4	129	145	13	122	19
Future Vol, veh/h	24	71	5	141	73	11	4	129	145	13	122	19
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	0	1	0	5	1	0	0	2	2	15	8	0
Mvmt Flow	26	76	5	150	78	12	4	137	154	14	130	20
Number of Lanes	1	1	0	1	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	9.9	10.9	9.8	11.6
HCM LOS	A	B	A	B

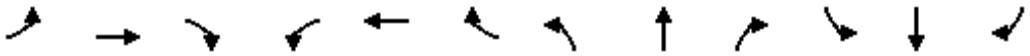
Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	3%	0%	100%	0%	100%	0%	8%
Vol Thru, %	97%	0%	0%	93%	0%	87%	79%
Vol Right, %	0%	100%	0%	7%	0%	13%	12%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	133	145	24	76	141	84	154
LT Vol	4	0	24	0	141	0	13
Through Vol	129	0	0	71	0	73	122
RT Vol	0	145	0	5	0	11	19
Lane Flow Rate	141	154	26	81	150	89	164
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.228	0.22	0.047	0.138	0.272	0.146	0.28
Departure Headway (Hd)	5.811	5.123	6.677	6.14	6.539	5.871	6.159
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	618	702	537	585	551	612	585
Service Time	3.539	2.851	4.411	3.874	4.267	3.598	4.189
HCM Lane V/C Ratio	0.228	0.219	0.048	0.138	0.272	0.145	0.28
HCM Control Delay	10.3	9.3	9.7	9.9	11.7	9.6	11.6
HCM Lane LOS	B	A	A	A	B	A	B
HCM 95th-tile Q	0.9	0.8	0.1	0.5	1.1	0.5	1.1



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	6	4	1	1	0	1
Future Volume (Veh/h)	6	4	1	1	0	1
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.27	0.27	0.27	0.27	0.27	0.27
Hourly flow rate (vph)	22	15	4	4	0	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)						
pX, platoon unblocked						
vC, conflicting volume	8				65	6
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	8				65	6
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				100	100
cM capacity (veh/h)	1625				933	1083

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	37	8	4
Volume Left	22	0	0
Volume Right	0	4	4
cSH	1625	1700	1083
Volume to Capacity	0.01	0.00	0.00
Queue Length 95th (m)	0.3	0.0	0.1
Control Delay (s)	4.3	0.0	8.3
Lane LOS	A		A
Approach Delay (s)	4.3	0.0	8.3
Approach LOS			A

Intersection Summary			
Average Delay	4.0		
Intersection Capacity Utilization	15.5%	ICU Level of Service	A
Analysis Period (min)	15		

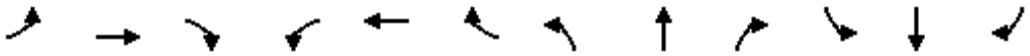


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	0	0	0	1	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0	1	0	0	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Hourly flow rate (vph)	0	0	0	0	0	0	4	0	0	0	0	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	8	8	0	8	8	0	0			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	8	8	0	8	8	0	0			0		
tC, single (s)	7.2	6.5	6.3	7.1	6.5	6.2	4.1			4.3		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.4	3.5	4.0	3.3	2.2			2.4		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	996	889	1062	1015	889	1085	1636			1524		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	0	4	0
Volume Left	0	0	4	0
Volume Right	0	0	0	0
cSH	1700	1700	1636	1700
Volume to Capacity	0.00	0.00	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.1	0.0
Control Delay (s)	0.0	0.0	7.2	0.0
Lane LOS	A	A	A	
Approach Delay (s)	0.0	0.0	7.2	0.0
Approach LOS	A	A		

Intersection Summary				
Average Delay	7.2			
Intersection Capacity Utilization	6.7%	ICU Level of Service	A	
Analysis Period (min)	15			

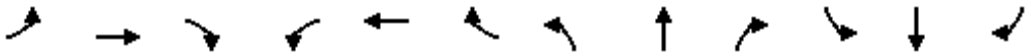
Appendix D – Future Background Traffic Conditions - Capacity Analysis Results



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	0	7	0	2	0	2	110	0	2	115	1
Future Volume (Veh/h)	2	0	7	0	2	0	2	110	0	2	115	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	2	0	7	0	2	0	2	117	0	2	122	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	248	248	122	254	248	117	123			117		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	248	248	122	254	248	117	123			117		
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 %	100	100	99	100	100	100	100			100		
cM capacity (veh/h)	706	657	934	696	656	941	1477			1484		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	9	2	119	125
Volume Left	2	0	2	2
Volume Right	7	0	0	1
cSH	871	656	1477	1484
Volume to Capacity	0.01	0.00	0.00	0.00
Queue Length 95th (m)	0.2	0.1	0.0	0.0
Control Delay (s)	9.2	10.5	0.1	0.1
Lane LOS	A	B	A	A
Approach Delay (s)	9.2	10.5	0.1	0.1
Approach LOS	A	B		

Intersection Summary				
Average Delay	0.5			
Intersection Capacity Utilization	17.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	29	70	5	132	82	17	8	102	109	11	143	20
Future Volume (vph)	29	70	5	132	82	17	8	102	109	11	143	20
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	34	82	6	155	96	20	9	120	128	13	168	24

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1
Volume Total (vph)	34	88	155	116	129	128	205
Volume Left (vph)	34	0	155	0	9	0	13
Volume Right (vph)	0	6	0	20	0	128	24
Hadj (s)	0.55	0.06	0.69	0.02	0.32	-0.60	0.09
Departure Headway (s)	6.8	6.3	6.7	6.0	6.3	5.4	6.1
Degree Utilization, x	0.06	0.16	0.29	0.19	0.23	0.19	0.35
Capacity (veh/h)	486	525	507	562	541	628	560
Control Delay (s)	9.1	9.3	11.2	9.3	9.9	8.4	12.3
Approach Delay (s)	9.2		10.4		9.2		12.3
Approach LOS	A		B		A		B

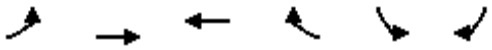
Intersection Summary				
Delay	10.3			
Level of Service	B			
Intersection Capacity Utilization	36.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	11.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	29	70	5	132	82	17	8	102	109	11	143	20
Future Vol, veh/h	29	70	5	132	82	17	8	102	109	11	143	20
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	3	7	0	11	4	29	0	18	6	9	10	0
Mvmt Flow	34	82	6	155	96	20	9	120	128	13	168	24
Number of Lanes	1	1	0	1	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	10.2	11.4	10.2	12.6
HCM LOS	B	B	B	B

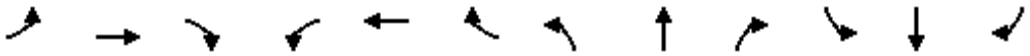
Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	7%	0%	100%	0%	100%	0%	6%
Vol Thru, %	93%	0%	0%	93%	0%	83%	82%
Vol Right, %	0%	100%	0%	7%	0%	17%	11%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	110	109	29	75	132	99	174
LT Vol	8	0	29	0	132	0	11
Through Vol	102	0	0	70	0	82	143
RT Vol	0	109	0	5	0	17	20
Lane Flow Rate	129	128	34	88	155	116	205
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.218	0.201	0.065	0.157	0.291	0.194	0.352
Departure Headway (Hd)	6.069	5.633	6.876	6.389	6.754	6.004	6.19
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	591	636	521	561	533	597	581
Service Time	3.808	3.372	4.621	4.134	4.494	3.744	4.23
HCM Lane V/C Ratio	0.218	0.201	0.065	0.157	0.291	0.194	0.353
HCM Control Delay	10.5	9.8	10.1	10.3	12.3	10.2	12.6
HCM Lane LOS	B	A	B	B	B	B	B
HCM 95th-tile Q	0.8	0.7	0.2	0.6	1.2	0.7	1.6



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	5	1	2	1	8
Future Volume (Veh/h)	2	5	1	2	1	8
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68
Hourly flow rate (vph)	3	7	1	3	1	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)						
pX, platoon unblocked						
vC, conflicting volume	4				16	2
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	4				16	2
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	99
cM capacity (veh/h)	1631				1006	1087

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	10	4	13
Volume Left	3	0	1
Volume Right	0	3	12
cSH	1631	1700	1081
Volume to Capacity	0.00	0.00	0.01
Queue Length 95th (m)	0.0	0.0	0.3
Control Delay (s)	2.2	0.0	8.4
Lane LOS	A		A
Approach Delay (s)	2.2	0.0	8.4
Approach LOS			A

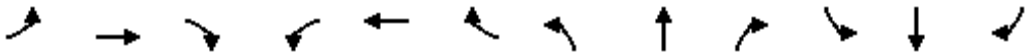
Intersection Summary			
Average Delay	4.8		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	0	0	0	2	0	0	0	2	0
Future Volume (Veh/h)	0	0	0	0	0	0	2	0	0	0	2	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
Hourly flow rate (vph)	0	0	0	0	0	0	3	0	0	0	3	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	9	9	3	9	9	0	3			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	9	9	3	9	9	0	3			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.6			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.7			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	1013	888	1087	1013	888	1091	1355			1636		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	0	3	3
Volume Left	0	0	3	0
Volume Right	0	0	0	0
cSH	1700	1700	1355	1636
Volume to Capacity	0.00	0.00	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.1	0.0
Control Delay (s)	0.0	0.0	7.7	0.0
Lane LOS	A	A	A	
Approach Delay (s)	0.0	0.0	7.7	0.0
Approach LOS	A	A		

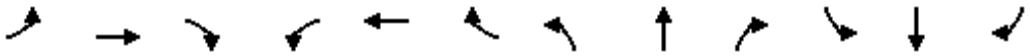
Intersection Summary				
Average Delay	3.8			
Intersection Capacity Utilization	6.7%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1	5	2	0	4	5	136	0	4	119	1
Future Volume (Veh/h)	0	1	5	2	0	4	5	136	0	4	119	1
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)	0	1	5	2	0	4	5	148	0	4	129	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	300	296	130	301	296	148	130			148		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	300	296	130	301	296	148	130			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 %	100	100	99	100	100	100	100			100		
cM capacity (veh/h)	651	615	926	648	615	904	1468			1446		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	6	6	153	134
Volume Left	0	2	5	4
Volume Right	5	4	0	1
cSH	854	799	1468	1446
Volume to Capacity	0.01	0.01	0.00	0.00
Queue Length 95th (m)	0.2	0.2	0.1	0.1
Control Delay (s)	9.2	9.5	0.3	0.2
Lane LOS	A	A	A	A
Approach Delay (s)	9.2	9.5	0.3	0.2
Approach LOS	A	A		

Intersection Summary				
Average Delay	0.6			
Intersection Capacity Utilization	19.3%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	24	80	5	141	82	11	4	145	145	13	137	19
Future Volume (vph)	24	80	5	141	82	11	4	145	145	13	137	19
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	26	85	5	150	87	12	4	154	154	14	146	20

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1
Volume Total (vph)	26	90	150	99	158	154	180
Volume Left (vph)	26	0	150	0	4	0	14
Volume Right (vph)	0	5	0	12	0	154	20
Hadj (s)	0.50	-0.02	0.58	-0.07	0.05	-0.67	0.08
Departure Headway (s)	6.8	6.2	6.6	6.0	5.9	5.2	6.0
Degree Utilization, x	0.05	0.16	0.28	0.16	0.26	0.22	0.30
Capacity (veh/h)	490	533	513	567	583	658	563
Control Delay (s)	8.9	9.2	10.9	8.9	9.7	8.4	11.6
Approach Delay (s)	9.1		10.1		9.1		11.6
Approach LOS	A		B		A		B

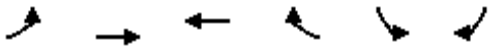
Intersection Summary				
Delay	9.9			
Level of Service	A			
Intersection Capacity Utilization	40.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	10.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	24	80	5	141	82	11	4	145	145	13	137	19
Future Vol, veh/h	24	80	5	141	82	11	4	145	145	13	137	19
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	0	1	0	5	1	0	0	2	2	15	8	0
Mvmt Flow	26	85	5	150	87	12	4	154	154	14	146	20
Number of Lanes	1	1	0	1	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	10.1	11.2	10.1	12.2
HCM LOS	B	B	B	B

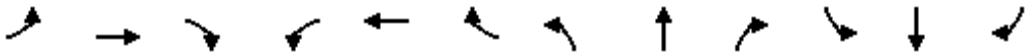
Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	3%	0%	100%	0%	100%	0%	8%
Vol Thru, %	97%	0%	0%	94%	0%	88%	81%
Vol Right, %	0%	100%	0%	6%	0%	12%	11%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	149	145	24	85	141	93	169
LT Vol	4	0	24	0	141	0	13
Through Vol	145	0	0	80	0	82	137
RT Vol	0	145	0	5	0	11	19
Lane Flow Rate	159	154	26	90	150	99	180
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.26	0.224	0.048	0.158	0.278	0.165	0.313
Departure Headway (Hd)	5.914	5.227	6.819	6.286	6.67	6.01	6.269
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	607	686	525	571	539	597	574
Service Time	3.649	2.962	4.561	4.028	4.407	3.746	4.307
HCM Lane V/C Ratio	0.262	0.224	0.05	0.158	0.278	0.166	0.314
HCM Control Delay	10.7	9.5	9.9	10.2	12	9.9	12.2
HCM Lane LOS	B	A	A	B	B	A	B
HCM 95th-tile Q	1	0.9	0.2	0.6	1.1	0.6	1.3



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	6	4	1	1	0	1
Future Volume (Veh/h)	6	4	1	1	0	1
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.27	0.27	0.27	0.27	0.27	0.27
Hourly flow rate (vph)	22	15	4	4	0	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)						
pX, platoon unblocked						
vC, conflicting volume	8				65	6
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	8				65	6
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				100	100
cM capacity (veh/h)	1625				933	1083

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	37	8	4
Volume Left	22	0	0
Volume Right	0	4	4
cSH	1625	1700	1083
Volume to Capacity	0.01	0.00	0.00
Queue Length 95th (m)	0.3	0.0	0.1
Control Delay (s)	4.3	0.0	8.3
Lane LOS	A		A
Approach Delay (s)	4.3	0.0	8.3
Approach LOS			A

Intersection Summary			
Average Delay	4.0		
Intersection Capacity Utilization	15.5%	ICU Level of Service	A
Analysis Period (min)	15		

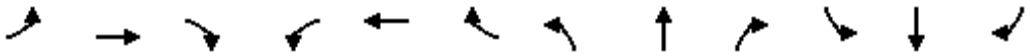


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	0	0	0	1	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0	1	0	0	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Hourly flow rate (vph)	0	0	0	0	0	0	4	0	0	0	0	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	8	8	0	8	8	0	0			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	8	8	0	8	8	0	0			0		
tC, single (s)	7.2	6.5	6.3	7.1	6.5	6.2	4.1			4.3		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.4	3.5	4.0	3.3	2.2			2.4		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	996	889	1062	1015	889	1085	1636			1524		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	0	4	0
Volume Left	0	0	4	0
Volume Right	0	0	0	0
cSH	1700	1700	1636	1700
Volume to Capacity	0.00	0.00	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.1	0.0
Control Delay (s)	0.0	0.0	7.2	0.0
Lane LOS	A	A	A	
Approach Delay (s)	0.0	0.0	7.2	0.0
Approach LOS	A	A		

Intersection Summary				
Average Delay	7.2			
Intersection Capacity Utilization	6.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Appendix E – Future Total Traffic Conditions - Capacity Analysis Results



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	0	7	0	2	0	2	117	0	4	118	1
Future Volume (Veh/h)	2	0	7	0	2	0	2	117	0	4	118	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	2	0	7	0	2	0	2	124	0	4	126	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	264	262	126	270	263	124	127			124		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	264	262	126	270	263	124	127			124		
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 %	100	100	99	100	100	100	100			100		
cM capacity (veh/h)	690	643	929	680	643	932	1472			1475		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	9	2	126	131
Volume Left	2	0	2	4
Volume Right	7	0	0	1
cSH	863	643	1472	1475
Volume to Capacity	0.01	0.00	0.00	0.00
Queue Length 95th (m)	0.2	0.1	0.0	0.1
Control Delay (s)	9.2	10.6	0.1	0.2
Lane LOS	A	B	A	A
Approach Delay (s)	9.2	10.6	0.1	0.2
Approach LOS	A	B		

Intersection Summary				
Average Delay	0.6			
Intersection Capacity Utilization	18.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	6	3	116	2	1	119
Future Volume (Veh/h)	6	3	116	2	1	119
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	3	126	2	1	129
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	258	127			128	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	258	127			128	
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	100			100	
cM capacity (veh/h)	735	929			1470	

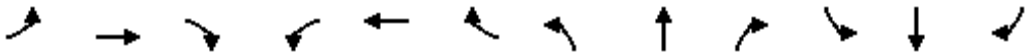
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	10	128	130
Volume Left	7	0	1
Volume Right	3	2	0
cSH	784	1700	1470
Volume to Capacity	0.01	0.08	0.00
Queue Length 95th (m)	0.3	0.0	0.0
Control Delay (s)	9.7	0.0	0.1
Lane LOS	A		A
Approach Delay (s)	9.7	0.0	0.1
Approach LOS	A		

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	17.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	6	3	115	2	1	124
Future Volume (Veh/h)	6	3	115	2	1	124
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	3	125	2	1	135
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	263	126			127	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	263	126			127	
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	100			100	
cM capacity (veh/h)	730	930			1472	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	10	127	136
Volume Left	7	0	1
Volume Right	3	2	0
cSH	780	1700	1472
Volume to Capacity	0.01	0.07	0.00
Queue Length 95th (m)	0.3	0.0	0.0
Control Delay (s)	9.7	0.0	0.1
Lane LOS	A		A
Approach Delay (s)	9.7	0.0	0.1
Approach LOS	A		

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	17.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	30	71	5	143	88	17	8	104	110	12	152	21
Future Volume (vph)	30	71	5	143	88	17	8	104	110	12	152	21
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	35	84	6	168	104	20	9	122	129	14	179	25

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1
Volume Total (vph)	35	90	168	124	131	129	218
Volume Left (vph)	35	0	168	0	9	0	14
Volume Right (vph)	0	6	0	20	0	129	25
Hadj (s)	0.55	0.06	0.69	0.02	0.32	-0.60	0.09
Departure Headway (s)	7.0	6.5	6.8	6.1	6.4	5.5	6.2
Degree Utilization, x	0.07	0.16	0.32	0.21	0.23	0.20	0.37
Capacity (veh/h)	477	514	502	555	531	614	552
Control Delay (s)	9.3	9.5	11.7	9.6	10.2	8.6	12.8
Approach Delay (s)	9.4		10.8		9.4		12.8
Approach LOS	A		B		A		B

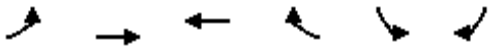
Intersection Summary				
Delay	10.7			
Level of Service	B			
Intersection Capacity Utilization	37.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	11.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	71	5	143	88	17	8	104	110	12	152	21
Future Vol, veh/h	30	71	5	143	88	17	8	104	110	12	152	21
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	3	7	0	11	4	29	0	18	6	9	10	0
Mvmt Flow	35	84	6	168	104	20	9	122	129	14	179	25
Number of Lanes	1	1	0	1	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	10.4	11.8	10.4	13.2
HCM LOS	B	B	B	B

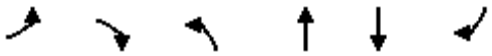
Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	7%	0%	100%	0%	100%	0%	6%
Vol Thru, %	93%	0%	0%	93%	0%	84%	82%
Vol Right, %	0%	100%	0%	7%	0%	16%	11%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	112	110	30	76	143	105	185
LT Vol	8	0	30	0	143	0	12
Through Vol	104	0	0	71	0	88	152
RT Vol	0	110	0	5	0	17	21
Lane Flow Rate	132	129	35	89	168	124	218
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.226	0.206	0.069	0.162	0.319	0.209	0.38
Departure Headway (Hd)	6.175	5.74	6.99	6.503	6.831	6.088	6.279
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	580	624	512	551	527	589	572
Service Time	3.925	3.49	4.743	4.255	4.577	3.833	4.327
HCM Lane V/C Ratio	0.228	0.207	0.068	0.162	0.319	0.211	0.381
HCM Control Delay	10.7	10	10.3	10.5	12.8	10.4	13.2
HCM Lane LOS	B	A	B	B	B	B	B
HCM 95th-tile Q	0.9	0.8	0.2	0.6	1.4	0.8	1.8



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	4	5	1	4	3	25
Future Volume (Veh/h)	4	5	1	4	3	25
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68
Hourly flow rate (vph)	6	7	1	6	4	37
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	7				23	4
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	7				23	4
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	97
cM capacity (veh/h)	1627				995	1085

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	13	7	41
Volume Left	6	0	4
Volume Right	0	6	37
cSH	1627	1700	1076
Volume to Capacity	0.00	0.00	0.04
Queue Length 95th (m)	0.1	0.0	0.9
Control Delay (s)	3.3	0.0	8.5
Lane LOS	A		A
Approach Delay (s)	3.3	0.0	8.5
Approach LOS			A

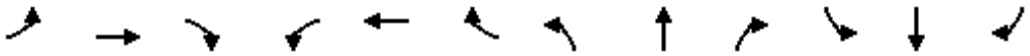
Intersection Summary			
Average Delay		6.4	
Intersection Capacity Utilization		13.8%	ICU Level of Service A
Analysis Period (min)		15	



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	19	4	2	2	2
Future Volume (Veh/h)	0	19	4	2	2	2
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68
Hourly flow rate (vph)	0	28	6	3	3	3
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	20	4	6			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	20	4	6			
tC, single (s)	6.4	6.2	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	100	97	100			
cM capacity (veh/h)	999	1085	1576			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	28	9	6
Volume Left	0	6	0
Volume Right	28	0	3
cSH	1085	1576	1700
Volume to Capacity	0.03	0.00	0.00
Queue Length 95th (m)	0.6	0.1	0.0
Control Delay (s)	8.4	4.9	0.0
Lane LOS	A	A	
Approach Delay (s)	8.4	4.9	0.0
Approach LOS	A		

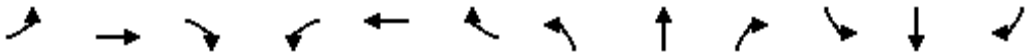
Intersection Summary			
Average Delay	6.5		
Intersection Capacity Utilization	13.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	2	0	0	0	2	0	0	0	2	0
Future Volume (Veh/h)	0	0	2	0	0	0	2	0	0	0	2	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
Hourly flow rate (vph)	0	0	3	0	0	0	3	0	0	0	3	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	9	9	3	12	9	0	3			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	9	9	3	12	9	0	3			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.6			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.7			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	1013	888	1087	1006	888	1091	1355			1636		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	3	0	3	3
Volume Left	0	0	3	0
Volume Right	3	0	0	0
cSH	1087	1700	1355	1636
Volume to Capacity	0.00	0.00	0.00	0.00
Queue Length 95th (m)	0.1	0.0	0.1	0.0
Control Delay (s)	8.3	0.0	7.7	0.0
Lane LOS	A	A	A	
Approach Delay (s)	8.3	0.0	7.7	0.0
Approach LOS	A	A		

Intersection Summary				
Average Delay	5.3			
Intersection Capacity Utilization	13.3%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1	5	2	0	14	5	141	0	11	127	1
Future Volume (Veh/h)	0	1	5	2	0	14	5	141	0	11	127	1
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)	0	1	5	2	0	15	5	153	0	12	138	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	340	326	138	331	326	153	139			153		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	340	326	138	331	326	153	139			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 %	100	100	99	100	100	98	100			99		
cM capacity (veh/h)	602	589	915	616	589	898	1457			1440		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	6	17	158	151
Volume Left	0	2	5	12
Volume Right	5	15	0	1
cSH	838	852	1457	1440
Volume to Capacity	0.01	0.02	0.00	0.01
Queue Length 95th (m)	0.2	0.5	0.1	0.2
Control Delay (s)	9.3	9.3	0.3	0.7
Lane LOS	A	A	A	A
Approach Delay (s)	9.3	9.3	0.3	0.7
Approach LOS	A	A		

Intersection Summary				
Average Delay	1.1			
Intersection Capacity Utilization	21.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	3	2	144	6	4	129
Future Volume (Veh/h)	3	2	144	6	4	129
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	2	157	7	4	140
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	308	160			164	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	308	160			164	
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	100			100	
cM capacity (veh/h)	686	890			1427	

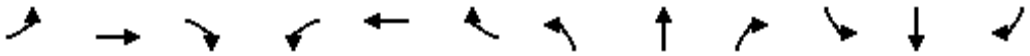
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	5	164	144
Volume Left	3	0	4
Volume Right	2	7	0
cSH	755	1700	1427
Volume to Capacity	0.01	0.10	0.00
Queue Length 95th (m)	0.2	0.0	0.1
Control Delay (s)	9.8	0.0	0.2
Lane LOS	A		A
Approach Delay (s)	9.8	0.0	0.2
Approach LOS	A		

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	20.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	3	2	148	6	4	128
Future Volume (Veh/h)	3	2	148	6	4	128
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	2	161	7	4	139
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	312	164			168	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	312	164			168	
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	100			100	
cM capacity (veh/h)	683	885			1422	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	5	168	143
Volume Left	3	0	4
Volume Right	2	7	0
cSH	752	1700	1422
Volume to Capacity	0.01	0.10	0.00
Queue Length 95th (m)	0.2	0.0	0.1
Control Delay (s)	9.8	0.0	0.2
Lane LOS	A		A
Approach Delay (s)	9.8	0.0	0.2
Approach LOS	A		

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	20.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	26	84	5	143	83	12	4	155	152	14	142	20
Future Volume (vph)	26	84	5	143	83	12	4	155	152	14	142	20
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	28	89	5	152	88	13	4	165	162	15	151	21

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1
Volume Total (vph)	28	94	152	101	169	162	187
Volume Left (vph)	28	0	152	0	4	0	15
Volume Right (vph)	0	5	0	13	0	162	21
Hadj (s)	0.50	-0.02	0.58	-0.08	0.05	-0.67	0.08
Departure Headway (s)	6.9	6.3	6.7	6.0	5.9	5.2	6.1
Degree Utilization, x	0.05	0.17	0.28	0.17	0.28	0.24	0.32
Capacity (veh/h)	482	524	505	558	576	650	557
Control Delay (s)	9.0	9.4	11.2	9.1	10.0	8.6	11.9
Approach Delay (s)	9.3		10.3		9.4		11.9
Approach LOS	A		B		A		B

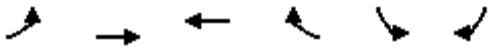
Intersection Summary				
Delay	10.2			
Level of Service	B			
Intersection Capacity Utilization	41.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	11.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	26	84	5	143	83	12	4	155	152	14	142	20
Future Vol, veh/h	26	84	5	143	83	12	4	155	152	14	142	20
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	0	1	0	5	1	0	0	2	2	15	8	0
Mvmt Flow	28	89	5	152	88	13	4	165	162	15	151	21
Number of Lanes	1	1	0	1	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	10.3	11.4	10.4	12.5
HCM LOS	B	B	B	B

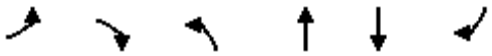
Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	3%	0%	100%	0%	100%	0%	8%
Vol Thru, %	97%	0%	0%	94%	0%	87%	81%
Vol Right, %	0%	100%	0%	6%	0%	13%	11%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	159	152	26	89	143	95	176
LT Vol	4	0	26	0	143	0	14
Through Vol	155	0	0	84	0	83	142
RT Vol	0	152	0	5	0	12	20
Lane Flow Rate	169	162	28	95	152	101	187
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.281	0.238	0.053	0.168	0.286	0.171	0.33
Departure Headway (Hd)	5.978	5.292	6.917	6.385	6.766	6.099	6.347
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	600	678	517	561	531	587	565
Service Time	3.716	3.029	4.666	4.134	4.509	3.842	4.389
HCM Lane V/C Ratio	0.282	0.239	0.054	0.169	0.286	0.172	0.331
HCM Control Delay	11.1	9.7	10.1	10.4	12.2	10.1	12.5
HCM Lane LOS	B	A	B	B	B	B	B
HCM 95th-tile Q	1.1	0.9	0.2	0.6	1.2	0.6	1.4



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	17	4	1	3	0	3
Future Volume (Veh/h)	17	4	1	3	0	3
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.27	0.27	0.27	0.27	0.27	0.27
Hourly flow rate (vph)	63	15	4	11	0	11
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	15				150	10
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	15				150	10
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				100	99
cM capacity (veh/h)	1616				813	1078

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	78	15	11
Volume Left	63	0	0
Volume Right	0	11	11
cSH	1616	1700	1078
Volume to Capacity	0.04	0.01	0.01
Queue Length 95th (m)	0.9	0.0	0.2
Control Delay (s)	6.0	0.0	8.4
Lane LOS	A		A
Approach Delay (s)	6.0	0.0	8.4
Approach LOS			A

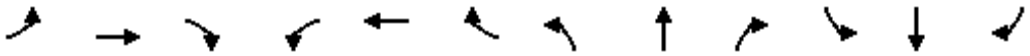
Intersection Summary			
Average Delay	5.4		
Intersection Capacity Utilization	17.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	2	13	1	0	7
Future Volume (Veh/h)	10	2	13	1	0	7
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.27	0.27	0.27	0.27	0.27	0.27
Hourly flow rate (vph)	37	7	48	4	0	26
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	113	13	26			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	113	13	26			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	99	97			
cM capacity (veh/h)	861	1073	1582			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	44	52	26
Volume Left	37	48	0
Volume Right	7	0	26
cSH	889	1582	1700
Volume to Capacity	0.05	0.03	0.02
Queue Length 95th (m)	1.2	0.7	0.0
Control Delay (s)	9.3	6.8	0.0
Lane LOS	A	A	
Approach Delay (s)	9.3	6.8	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	6.2		
Intersection Capacity Utilization	17.4%	ICU Level of Service	A
Analysis Period (min)	15		



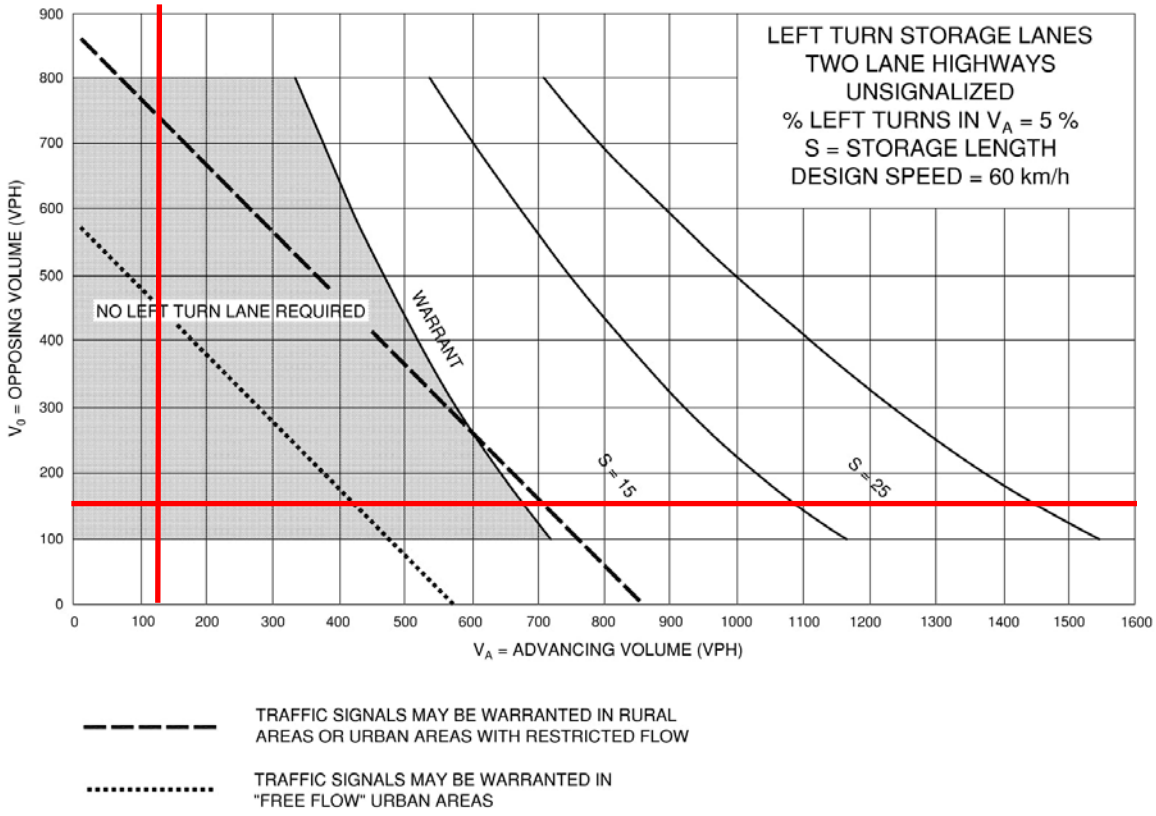
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	7	0	0	0	11	0	0	0	0	0
Future Volume (Veh/h)	0	0	7	0	0	0	11	0	0	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Hourly flow rate (vph)	0	0	28	0	0	0	44	0	0	0	0	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	88	88	0	116	88	0	0			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	88	88	0	116	88	0	0			0		
tC, single (s)	7.2	6.5	6.3	7.1	6.5	6.2	4.1			4.3		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.4	3.5	4.0	3.3	2.2			2.4		
p0 queue free %	100	100	97	100	100	100	97			100		
cM capacity (veh/h)	867	784	1062	825	784	1085	1636			1524		

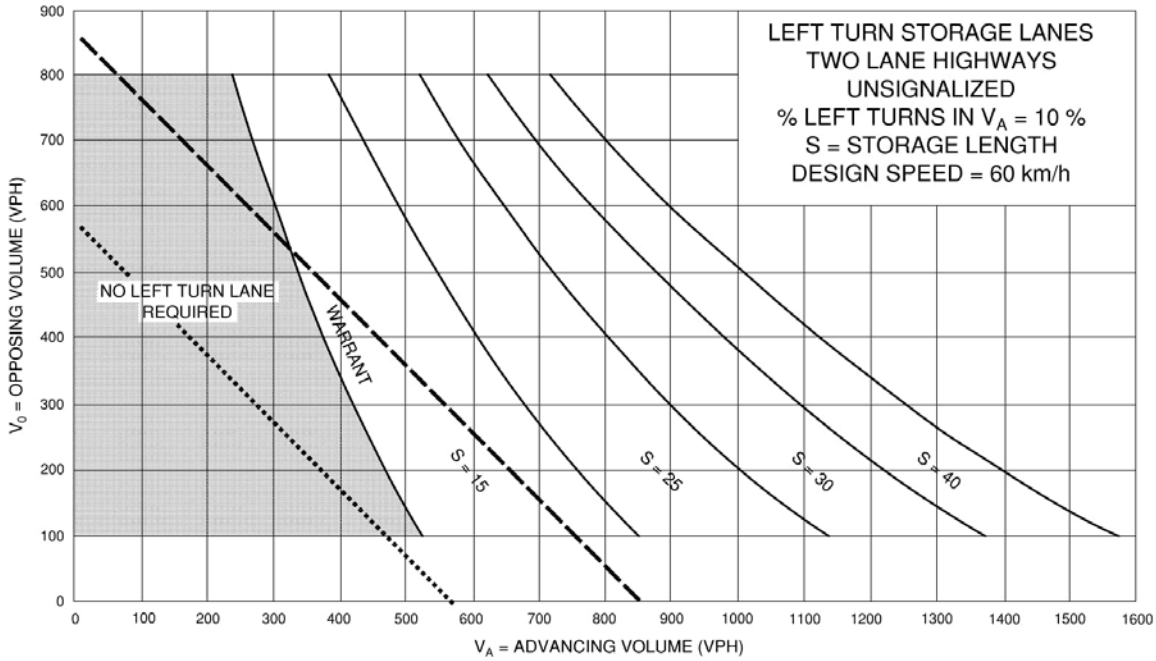
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	28	0	44	0
Volume Left	0	0	44	0
Volume Right	28	0	0	0
cSH	1062	1700	1636	1700
Volume to Capacity	0.03	0.00	0.03	0.00
Queue Length 95th (m)	0.6	0.0	0.6	0.0
Control Delay (s)	8.5	0.0	7.3	0.0
Lane LOS	A	A	A	
Approach Delay (s)	8.5	0.0	7.3	0.0
Approach LOS	A	A		

Intersection Summary				
Average Delay	7.7			
Intersection Capacity Utilization	13.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Appendix F – Left Turn Lane Warrant

Exhibit 9A-7


LEFT TURN STORAGE LANES
TWO LANE HIGHWAYS
UNSIGNALIZED
% LEFT TURNS IN V_A = 5 %
S = STORAGE LENGTH
DESIGN SPEED = 60 km/h
NO LEFT TURN LANE REQUIRED
WARRANT
S = 15
S = 25
V_0 = OPPOSING VOLUME (VPH)
V_A = ADVANCING VOLUME (VPH)
TRAFFIC SIGNALS MAY BE WARRANTED IN RURAL AREAS OR URBAN AREAS WITH RESTRICTED FLOW
TRAFFIC SIGNALS MAY BE WARRANTED IN "FREE FLOW" URBAN AREAS


LEFT TURN STORAGE LANES
TWO LANE HIGHWAYS
UNSIGNALIZED
% LEFT TURNS IN V_A = 10 %
S = STORAGE LENGTH
DESIGN SPEED = 60 km/h
NO LEFT TURN LANE REQUIRED
WARRANT
S = 15
S = 25
S = 30
S = 40
V_0 = OPPOSING VOLUME (VPH)
V_A = ADVANCING VOLUME (VPH)