Syer Line Industrial

Township of Cavan Monaghan
County of Peterborough

Traffic Impact Study for
Township of Cavan Monaghan

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Executive Summary

This traffic impact study was prepared in support of the proposed rezoning of an undeveloped property [Subject Site], for use as light industrial / employment uses. The Subject Site is located on the north side of Syer Line midblock between County Road 10 and Hutchinson Drive in the Township of Cavan Monaghan [Township], County of Peterborough [County]. This report assesses the impact of traffic related to the proposed development on the adjacent roadway and provides recommendations to accommodate this traffic in a safe and efficient manner.

The proposed development within the Subject Site is anticipated to include one full-movement access roadway onto Syer Line [Street A].

The scope of this analysis includes a review of the following intersections:

- Highway 115 SB Ramp & Syer Line / County Road 10;
- Highway 115 NB Ramp & Syer Line / County Road 10; and
- Syer Line / Street A.

Conclusions

1. The proposed development is expected to generate a total of 88 AM and 80 PM peak hour trips.
2. Detailed turning movement counts and pedestrian counts were obtained from the MTO at the following intersections Highway 115 SB Ramp & Syer Line / County Road 10 and Highway 115 NB Ramp & Syer Line / County Road 10, completed on Tuesday, October 30th, 2018. Detailed turning movement traffic and pedestrian counts were also completed at the Larmer Line / County Road 10 intersection, completed on Tuesday, April 25th, 2017.
3. An intersection operation analysis was completed at the study area intersections, using the existing (2022) and background (2027, 2032 and 2037) traffic volumes without the proposed development traffic. This enabled a review of existing and future traffic deficiencies that would be present without the influence of the proposed development. The following improvements are recommended:

   Background (2027) Traffic Volumes

   - Highway 115 SB Ramp & Syer Line / County Road 10
     - Installation of traffic signals.
   - Highway 115 NB Ramp & Syer Line / County Road 10
     - Installation of traffic signals.

   Background (2032) Traffic Volumes

   - Highway 115 SB Ramp & Syer Line / County Road 10
     - Widen the SB Off-Ramp for the construction of a westbound left turn lane with 150 metre storage length, 40 parallel length and 100 metre taper length and
     - Adjust signal to accommodate a protected + permissive westbound left turn phase.

- Highway 115 NB Ramp & Syer Line / County Road 10
    - Widen the County Road 10, north of the Highway 115 NB Ramp to provide two southbound lanes. The southbound configuration at the intersection should include a through + left lane and a through + right lane.

4. An estimate of the amount of traffic that would be generated by the Subject Site was prepared and assigned to the study area streets and intersections.
5. An intersection operation analysis was completed under total (2027, 2032 and 2037) traffic volumes with the proposed development operational at the study area intersections. No additional improvements are recommended within the study area.
6. It is recommended the MTO and County monitor the queuing on County Road 10 and on the Highway 115 ramps as the future Millbrook developments become fully built-out and occupied, to determine if infrastructure improvements are warranted noted for the 2027 and 2032 horizon years.
7. Street A will operate efficiently with full-movement access, with one-way stop control for southbound movements. A single ingress and egress lane at Street A will provide the necessary capacity to service the proposed development.
8. The available sight distance at Street A is sufficient for the intended use.
9. In summary, the proposed development will not cause any operational issues and will not add significant delay or congestion to the local roadway network.

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1 Introduction

1.1 Background

The **Township of Cavan Monaghan** is reviewing the impact of a proposed rezoning of an undeveloped property, for use as light industrial / employment lands [Subject Site]. The Subject Site is located on the north side of Syer Line midblock between County Road 10 and Hutchinson Drive in the Township of Cavan Monaghan [Township], County of Peterborough [County].

The proposed development within the Subject Site is anticipated to include one full-movement access roadway onto Syer Line [Street A].

The Township has retained **JD Northcote Engineering Inc.** [JD Engineering] to prepare this traffic impact study in support of the proposed rezoning of the Subject Site.

1.2 Study Area

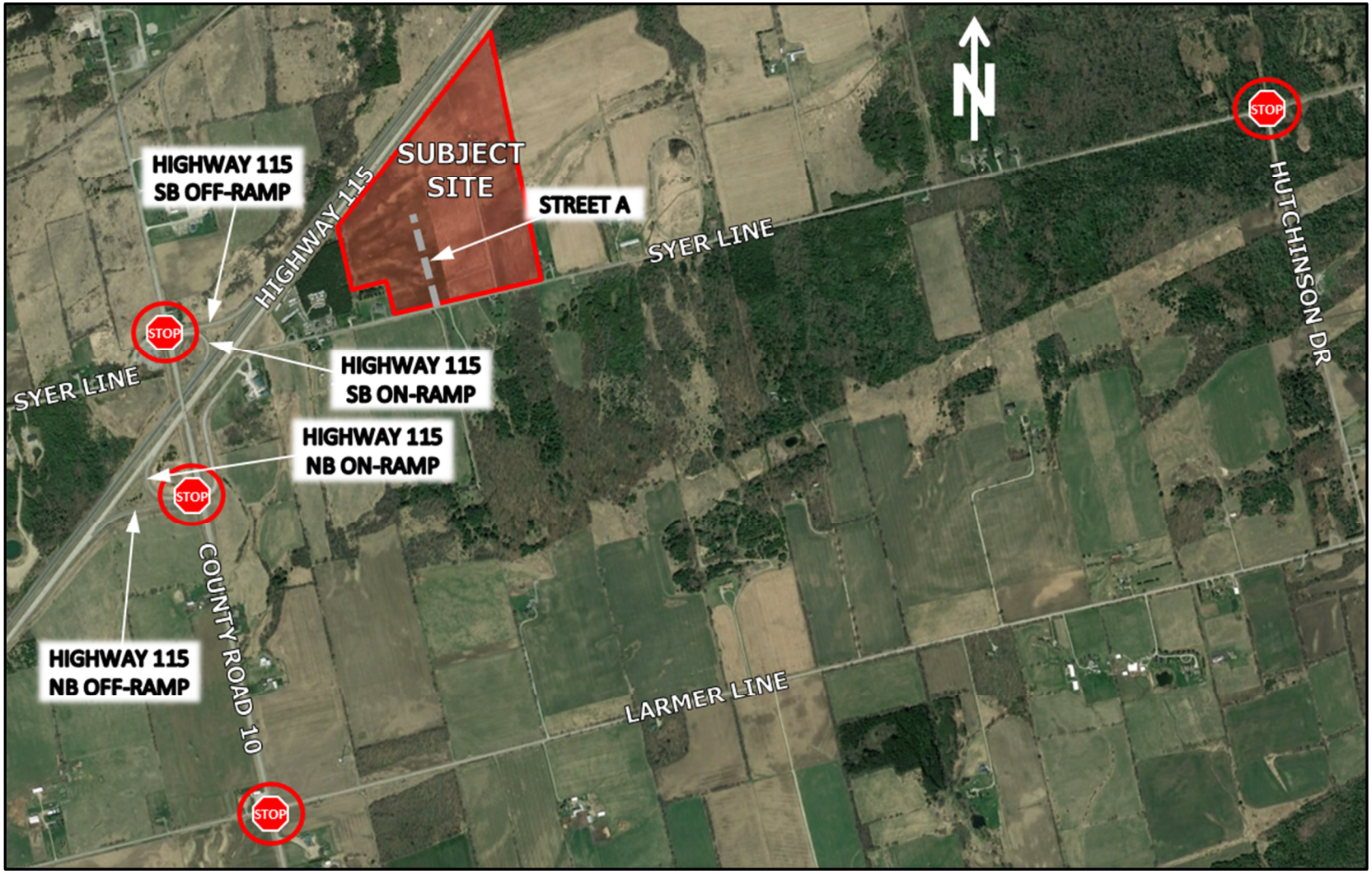
Figure 1 shows the location of the subject site and study area intersections in relation to the surrounding area. A plan for the proposed layout of the proposed development of the Subject Site has not been completed at this time. The location of Street A has been provided for conceptual purposes and to allow for a review of the impact of the proposed development traffic on Syer Line.

The subject site is bound by Syer Line to the south, Highway 115 to the north, existing residential and RV dealership to the west and agricultural lands to the east.

Based on our correspondence with the Township and the Ontario Ministry of Transportation [MTO], the following intersections are included in the traffic impact study:

- Highway 115 SB Ramp & Syer Line / County Road 10;
- Highway 115 NB Ramp & Syer Line / County Road 10; and
- Syer Line / Street A.

Figure 1 – Proposed Site Location and Study Area



1.3 Study Scope and Objectives

The purpose of this study is to identify the potential impacts to traffic flow at the site access and on the surrounding roadway network. The study analysis includes the following tasks:

- Determine existing traffic volumes and circulation patterns;
- Estimate future traffic volumes if the proposed development was not constructed, including the impact of additional proposed developments in the area;
- Complete level-of-service [LOS] analysis of horizon year (without the proposed development) traffic conditions and identify operational deficiencies;
- Estimate the amount of traffic that would be generated by the proposed development and assign to the roadway network;
- Complete LOS analysis of horizon year (with the proposed development) traffic conditions and identify additional operational deficiencies;
- Complete a review of traffic operations at the proposed Street A access and study area intersections;
- Review the proposed configuration at the proposed Street A access and study area intersections;
- Review the available sight distance at the proposed Street A access; and
- Document findings and recommendations in a final report.

1.4 Horizon Year and Analysis Periods

Traffic scenarios for the existing year (2022) and horizon years (2027, 2032 & 2037) were selected for analysis of traffic operations in the study area. The weekday morning [AM] and weekday afternoon [PM] peak hours have been selected as the analysis periods for this study.

2 Information Gathering

2.1 Street and Intersection Characteristics

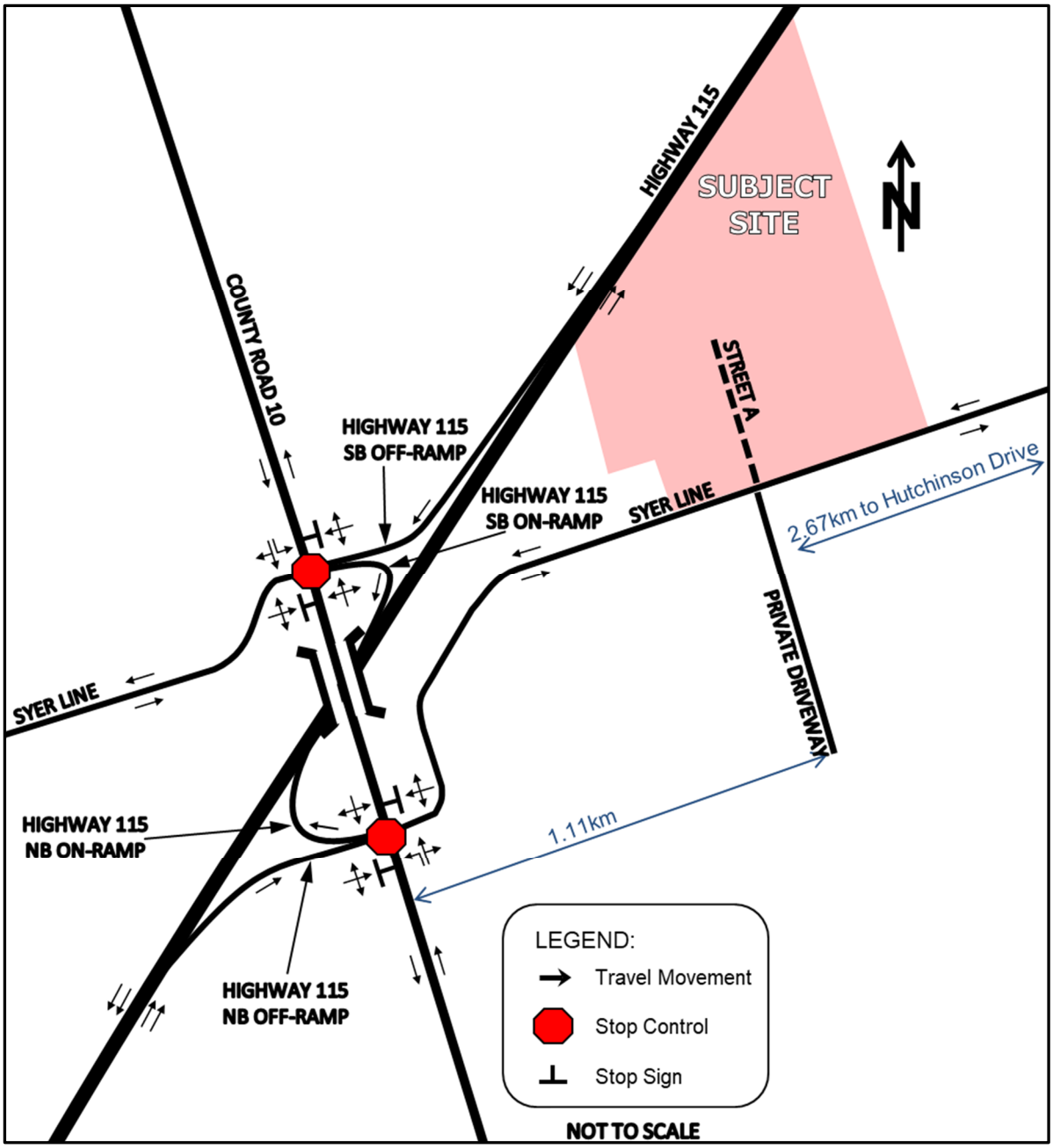
Highway 115 is a four-lane Class 1B freeway provincial highway with a rural cross-section. Highway 115 has a posted speed limit of 100km/h and is under jurisdiction of the Ontario Ministry of Transportation [MTO]. The Highway 115 on and off ramps (for both northbound and southbound directions) have posted advisory speed of 40 km/h and 70 km/h respectively.

County Road 10 is a two-lane arterial road with a rural cross-section and no sidewalks. County Road 10 has a posted speed limit of 80 km/h and is under jurisdiction of the County.

Syer Line is a two-lane local road with a rural cross-section and no sidewalks. Syer Line has a discontinuation east and west of County Road 10 (approximately 506 metres). Syer Line west of County Road 10 has a posted speed limit of 50 km/h and east of County Road 10 has an unposted (assumed) speed limit of 50km/h. Syer Line is under jurisdiction of the Township.

The existing intersection spacing and lane configuration within the study area is illustrated in **Figure 2**.

Figure 2 – Existing (2022) Intersection Spacing and Lane Configuration within Study Area



2.2 Local Transportation Infrastructure Improvements

Based on a review of the MTO's Highway's Programs interactive map, the County's Capital Works Project interactive map and the Township's Capital Budget (2022), there are no significant local road improvements scheduled in the study area that will impact traffic volumes or traffic patterns within the horizon years included in this analysis.

2.3 Transit Access

GO Transit provides the Route #88 (Peterborough / Oshawa) bus route which provides connections between the City of Oshawa and the City of Peterborough along Highway 115.

The Peterborough / Oshawa bus route operates on weekdays between 04:45 – 21:45 with daytime service every two hour and on weekends between 05:40 – 21:45 with service every two hours.

The closest bus stop for the Peterborough / Oshawa bus route is located in the southeast corner of the Highway 115 SB Ramp & Syer Line / County Road 10 intersection (1.7 km from the Subject Site).

2.4 Other Developments within the Study Area

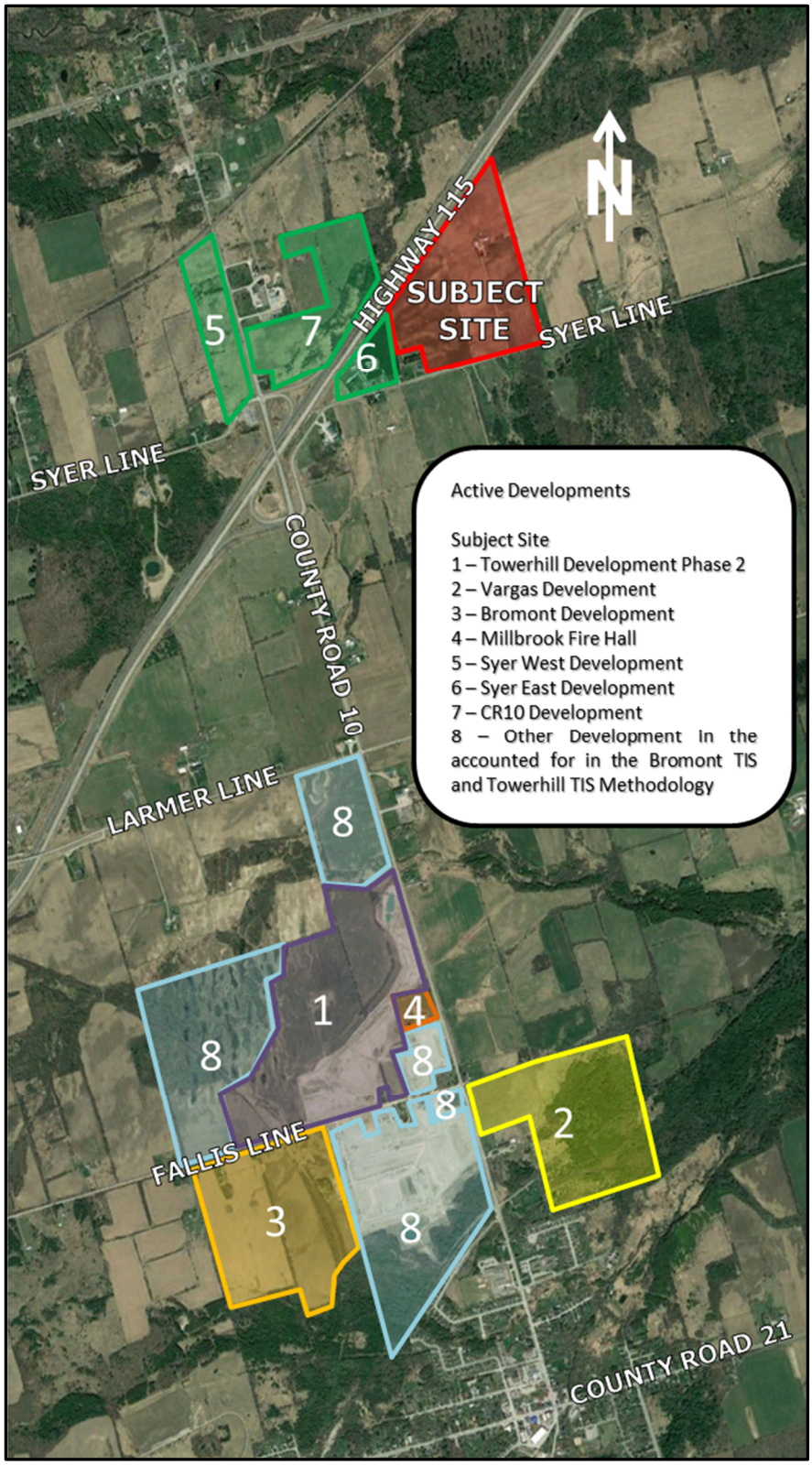
Based on discussions with County staff, the following developments are planned in the study area:

- Towerhill Development Phase 2;
- Vargas Development;
- Bromont Development;
- Millbrook Fire Hall;
- Syer West Development;
- Syer East Development; and
- CR10 Development.

The above noted developments are in various stages of development and are further described in the sections below. To be conservative in our analysis, we have assumed all of the developments will be built-out by the 2032 horizon year.

Figure 3 illustrates the location of these development relative to the study area.

Figure 3 – Adjacent Development Locations



2.4.1 Towerhill Developments Phase 2

Towerhill Developments Limited Is proposing to develop a 52.1 hectare parcel of land located northwest of the Fallis Line / County Road 10 intersection, south of the study area [Towerhill Developments Phase 2]. Towerhill Developments Phase 2 will consist of 328 single detached units, 245 townhouse units, 192 high-density residential units and an institutional block. JD Engineering completed a traffic impact study for Towerhill Developments Phase 2 (dated January 2021) [Towerhill TIS]. Towerhill Developments Phase 2 is pending site plan approval. It is anticipated Towerhill Developments Phase 2 will be fully built-out by 2023.

The traffic assignment for the Towerhill Developments Phase 2 was determined in the Towerhill TIS, however, will be based on the Bromont TIS, which is further discussed in Section 2.4.3. The Bromont TIS used the Towerhill TIS to determine the future traffic volumes on County Road 10 and added further context to the traffic projections in the Towerhill TIS.

2.4.2 Vargas Development

Vargas Properties Inc. is proposing a mixed-use development located on the southeast corner of the Fallis Line / County Road 10 intersection, south of the study area [Vargas Development]. Vargas Development will consist of 116 single detached units, 58 townhouse units, 70 medium density units and a commercial block. Asurza Engineers Limited completed a traffic impact study for the Vargas Development (dated April 2021) [Vargas TIS]. Vargas Development is pending site plan approval. It is anticipated the Vargas Development will be 50% occupied by 2025 and fully built-out and occupied by 2030

The traffic assignment for the Vargas Development was determined in the Vargas TIS, however, will be based on the Bromont TIS, which is further discussed in Section 2.4.3. The Bromont TIS used the Vargas TIS to estimate the traffic assignment for the Vargas Development.

2.4.3 Bromont Development

Bromont Group is proposing a residential development located southwest of the Fallis Line / County Road 10 intersection, south of the study area [Bromont Development]. The Bromont Development will consist of 371 single detached units, 148 townhouse units and 150 mid-rise residential units. Asurza Engineers Limited completed a traffic impact study for the Bromont Development (dated January 2022) [Bromont TIS]. Bromont Development is pending site plan approval. It is anticipated the Bromont Development will be 50% occupied by 2025 and fully built-out and occupied by 2030

The traffic assignment for the Bromont Development was obtained from the Bromont TIS (excerpts provided in **Appendix B**). **Figure 4** and **5** illustrates the traffic assignment for the Bromont Development for the 2027 and 2032 / 2037 horizon year, respectively. The distribution of this traffic within the study area has been estimated based on the 2016 Transportation Tomorrow Survey [TTS] data. The TTS data for the Township were retrieved using the TTS Internet Data Retrieval System [IDRS] (output attached as **Appendix I**). TTS data provides historical origin and destination work trip percentages for specific areas within the Town and southern Ontario.

Traffic distribution for the trips generated by the adjacent developments during the AM and PM peak hour is expected to generally follow commuter travel patterns. Our analysis is based on egress traffic during the AM peak hour. Logically, the distribution of ingress traffic will follow the inverse of the exiting traffic distribution. For each of the individual areas identified in the TTS data, we have selected the probable route of travel, assuming that people will select their route primarily based on travel time.

Table 1 illustrates the traffic distribution for the adjacent developments noted above, using the methodology outlined above.

Table 1 – Adjacent Development Traffic Distribution (Residential)

Travel Direction (to/from)	Percent of Total Traffic Generation
West via Highway 115*	17%
East via Highway 115	48%
South via County Road 10**	16%
North via County Road 10	2%
Total	**100%**

*Although traffic will be travelling west onto Highway 115, a large percentage will access the highway external from the study area and only a small portion will access Highway 115 via the interchange in the study area.
** Is outside of the study area.

The Bromont TIS accounted for the traffic assignment for the Towerhill Developments Phase 2 and the Vargas Development which were obtained in each respective report. For the purposes of our study, we have determined the traffic assignment for the Towerhill Developments Phase 2 and the Vargas Development and other minor development in the Millbrook community based on the Bromont TIS (excerpts provided in **Appendix B**).

Figure 6 and **7** illustrates the traffic assignment for the adjacent developments noted in the Bromont TIS[1] for the 2027 and 2032 / 2037 horizon year respectively, in the AM and PM peak hours. The traffic distribution in the study area has been assumed based on Table 9 and the assumptions noted above.

2.4.4 Millbrook Fire Hall

The Township is proposing to construct a fire hall on a site municipally known as 988 County Road 10, located north of the Municipal Office [Millbrook Fire Hall]. The Millbrook Fire Hall will be occupied by two user groups: the Township's Fire and Emergency Service and the County's Paramedic Service. JD Engineering completed a traffic impact study for the Millbrook Fire Hall (dated October 2021) [Millbrook Fire Hall TIS]. The Millbrook Fire Hall is site plan approved and is assumed to be built-out by 2027.

The traffic assignment for the Millbrook Fire Hall was obtained from the Millbrook Fire Hall TIS (excerpts provided in **Appendix B**). **Figure 8** illustrates the traffic assignment for the Millbrook Fire Hall, for the AM and PM peak hour. The traffic distribution in the study area is based on the existing traffic in the study area, as illustrated in **Table 2.**

Table 2 – Adjacent Development Traffic Distribution (Existing Traffic)

Scenario	Direction	Ingress / Egress Traffic Direction			
		West	East	South*	North
AM	In	6%	16%	51%	27%
	Out	16%	23%	30%	31%
PM	In	18%	24%	30%	28%
	Out	9%	13%	45%	33%

*Outside of the study area.

[1] The traffic assignment was determined by taking the difference of the background (2025 & 2030) traffic volumes and the existing (2021) traffic volumes with a background traffic growth rate applied to determine the equivalent 2025 and 2030 traffic volumes. To determine the 2027 traffic volumes, we have assumed linear growth based on the background (2025 & 2030) traffic volumes.

2.4.5 Syer West Development, Syer East Development & CR10 Development

There are a number of future rural employment zoned lands in the study area as illustrated in Figure 3 which have been reviewed as part of this study.

For the purpose of our analysis, it is assumed development will occur within the parcel located at the northwest corner of the Highway 115 SB Ramp & Syer Line / County Road 10 intersection [Syer West Development]. We have assumed the Syer West Development will have 20 employees and include access driveways onto County Road 10 north of the Highway 115 SB Ramp & Syer Line / County Road 10 intersection. We have assumed the Syer West Development will be built-out by 2032.

It is assumed development will occur within the parcel located east of the Highway 115 / County Road 10 interchange, west of the proposed development [Syer East Development]. We have assumed the Syer East Development will have 20 employees and include an access driveway onto Syer Line, west of Street A. We have assumed the Syer East Development will be built-out by 2037.

It is assumed development will occur within the parcel located at the northeast corner of the Highway 115 SB Ramp & Syer Line / County Road 10 intersection [CR10 Development]. We have assumed the CR10 Development will have 40 employees and include access driveways onto County Road 10 north of the Highway 115 SB Ramp & Syer Line / County Road 10 intersection. We have assumed the CR10 Development will be built-out by 2037.

The traffic generation for the Syer West Development, Syer East Development & CR10 Development was assumed based Institute of Transportation Engineers [ITE] *Trip Generation Manual* (11th Edition), which used the following land use:

- ITE land use 110 (General Light Industrial) – General Urban/Suburban Setting

The traffic generated by the Syer West Development, Syer East Development & CR10 Development is illustrated in **Table 3**.

Table 3 – Estimated Traffic Generation for Syer West, Syer East & CR10 Development

Development	Land Use	Size	AM Peak Hour			PM Peak Hour		
			IN	OUT	TOTAL	IN	OUT	TOTAL
Syer West Development	General Light Industrial ITE Land Use: 110	20 employees	9	2	11	2	8	10
Syer East Development		20 employees	9	2	11	2	8	10
CR10 Development		40 employees	18	4	22	4	16	20

The traffic distribution for the Syer West Development, Syer East Development & CR10 Development is based on the traffic distribution for the proposed development as noted in Table 13 in Section 4.2.

Figure 9, 10 and **11** illustrates the traffic assignment for the Syer West Development, Syer East Development & CR10 Development, in the AM and PM peak hours.

Figures 12, 13 and **14** illustrates total traffic assignment for the 2027, 2032 and 2037 horizon years respectively, for the adjacent developments in the study area during the AM and PM peak hour.

Figure 4 – Adjacent Development – Bromont Development Traffic Volumes (2027)

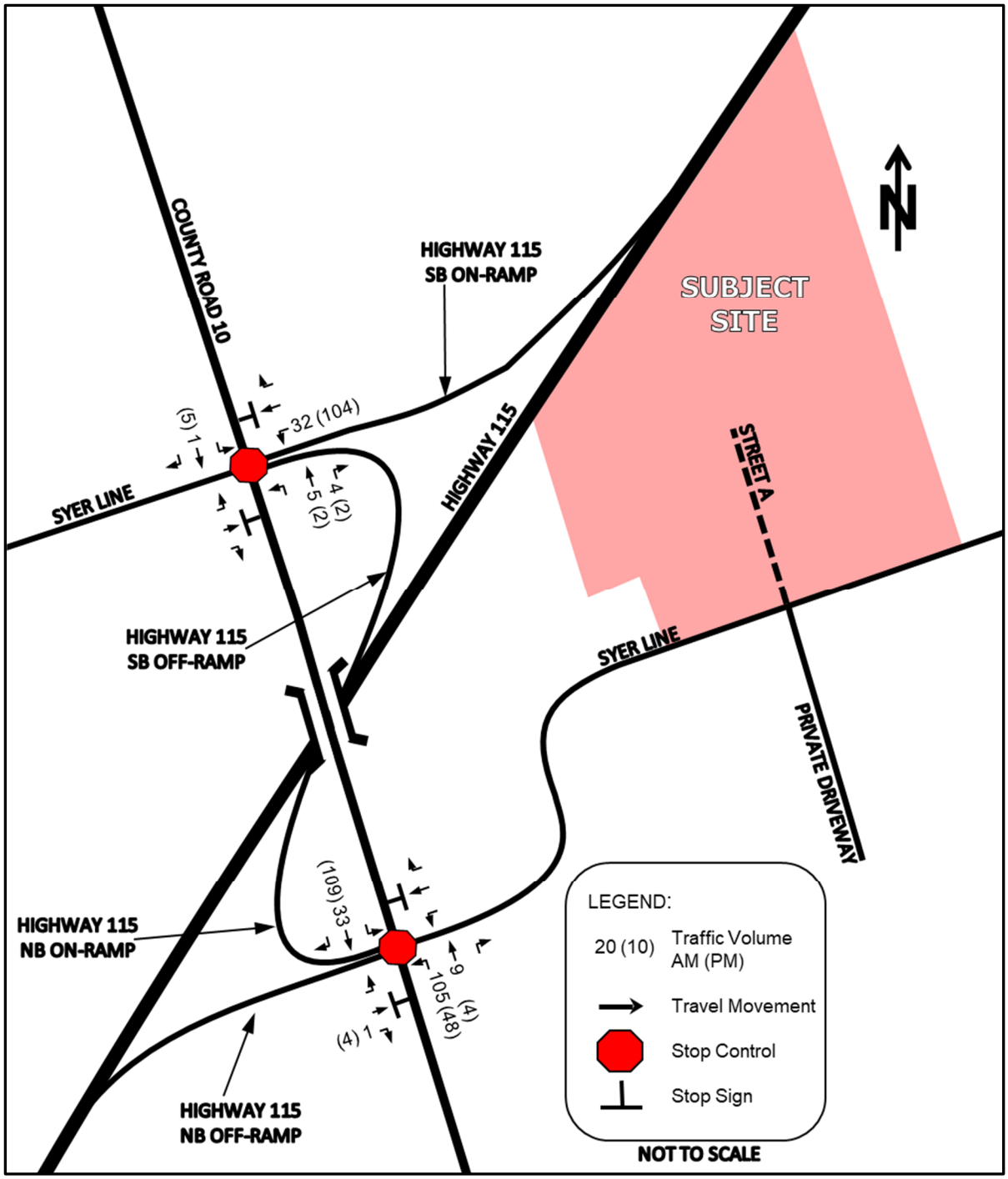


Figure 5 – Adjacent Development – Bromont Development Traffic Volumes (2032 / 2037)

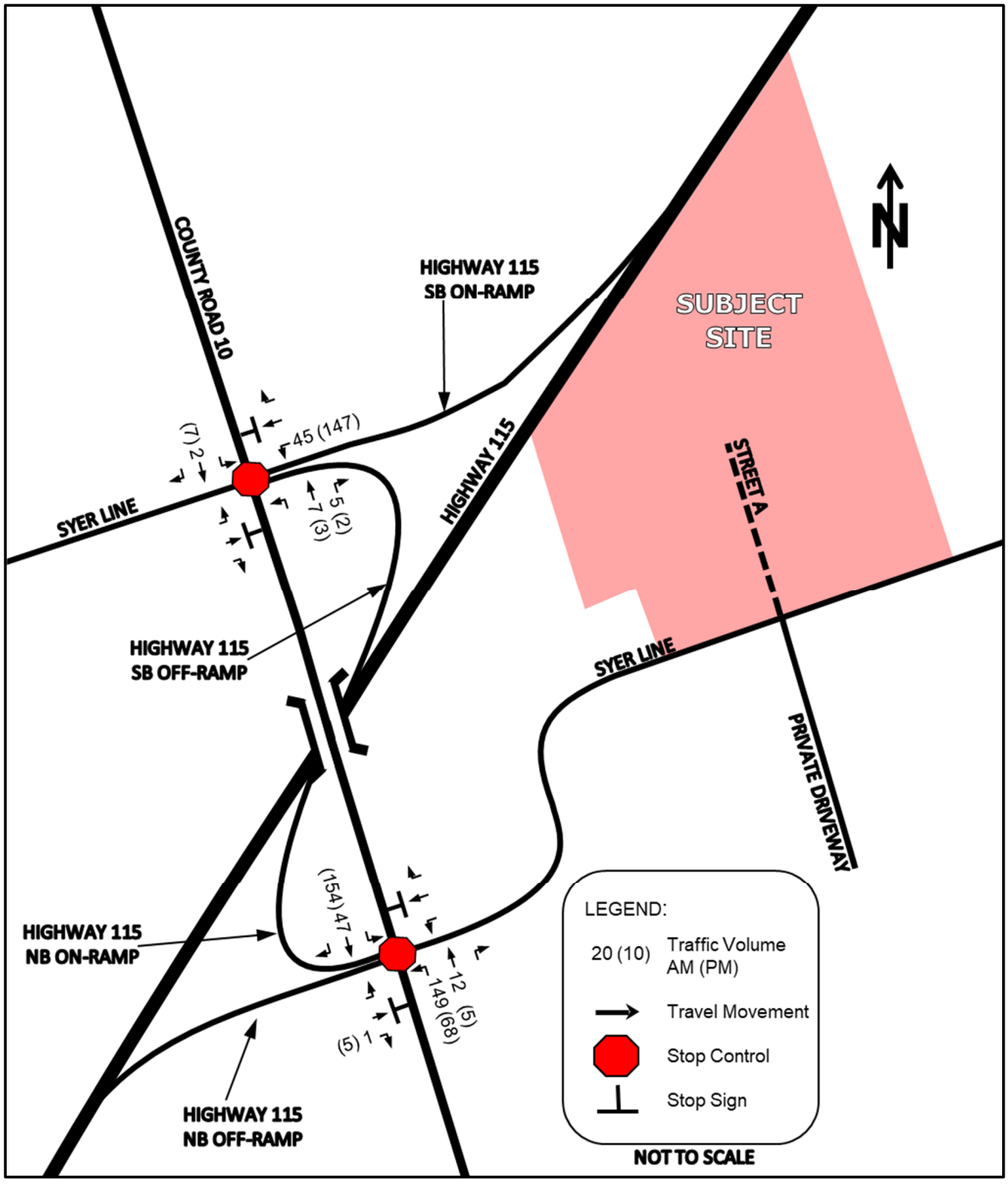
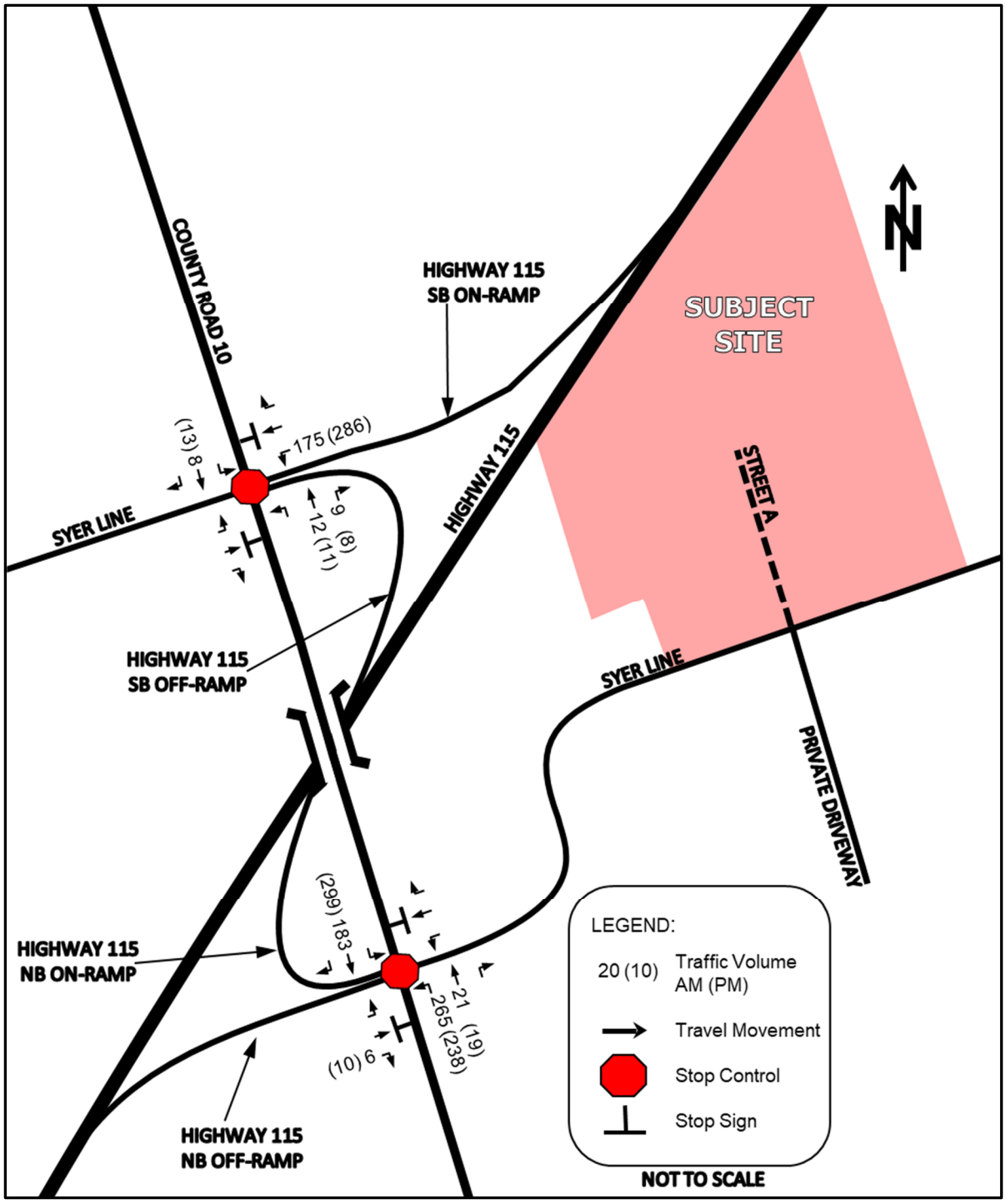


Figure 6 – Adjacent Development (Bromont TIS[2]) Traffic Volumes (2027)



[2] Adjacent development in the Bromont TIS includes the Towerhill Developments Phase 2, the Vargas Development and other minor development in the Millbrook community.

Figure 7 – Adjacent Development (Bromont TIS[2]) Traffic Volumes (2032 / 2037)

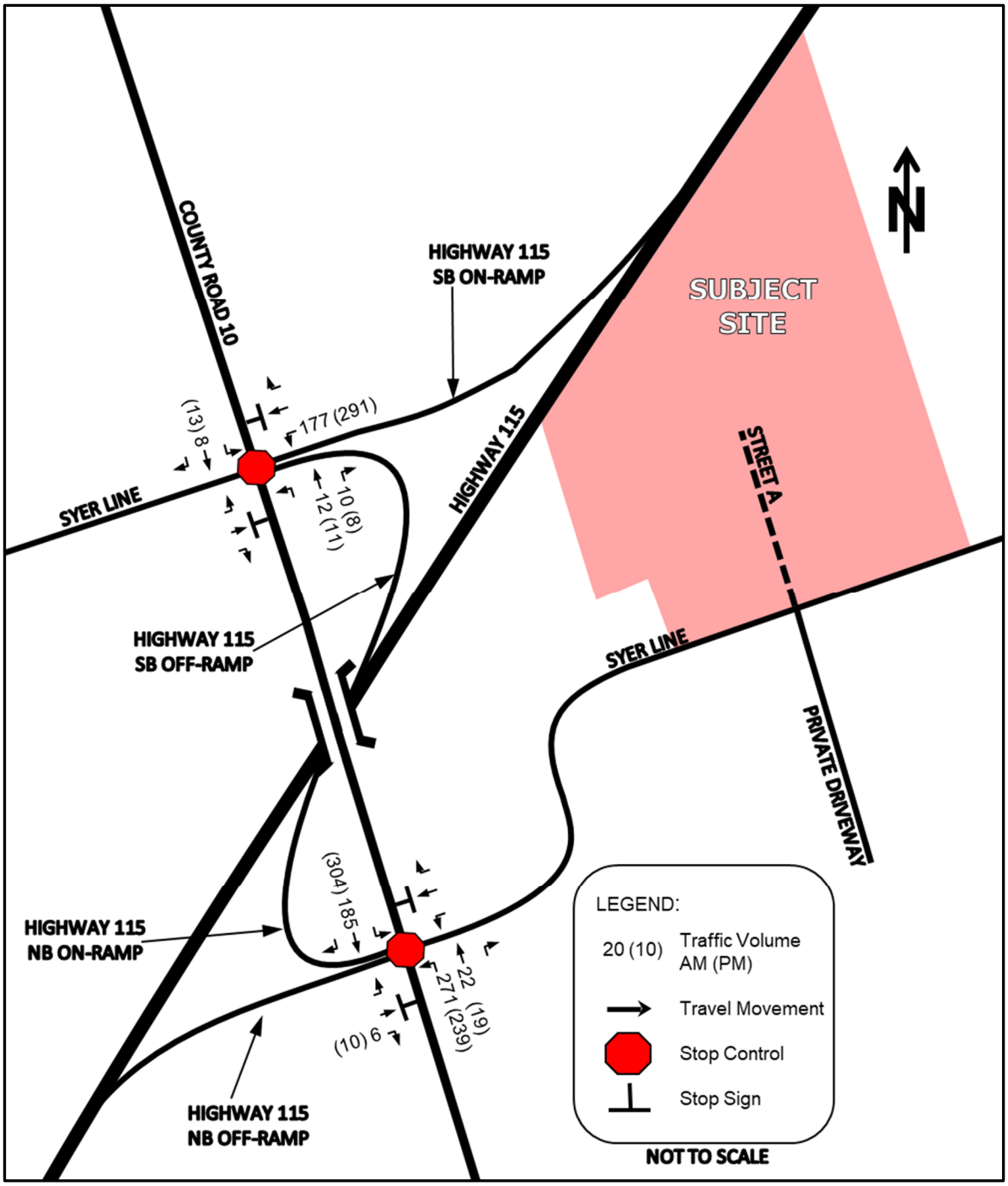


Figure 8 – Adjacent Development – Millbrook Fire Hall Traffic Volumes (2027)

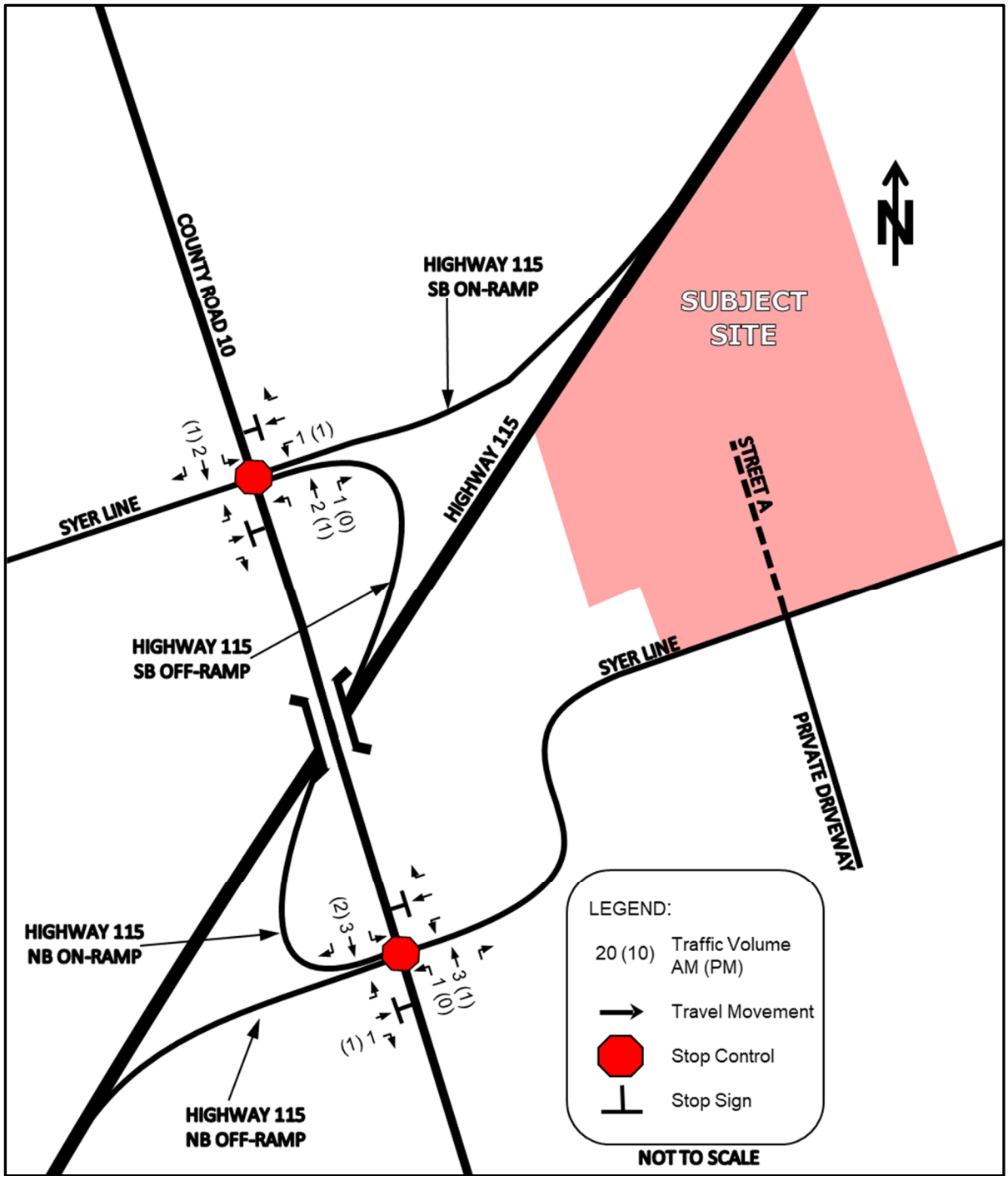


Figure 9 – Adjacent Development – Syer West Development Traffic Volumes (2032)

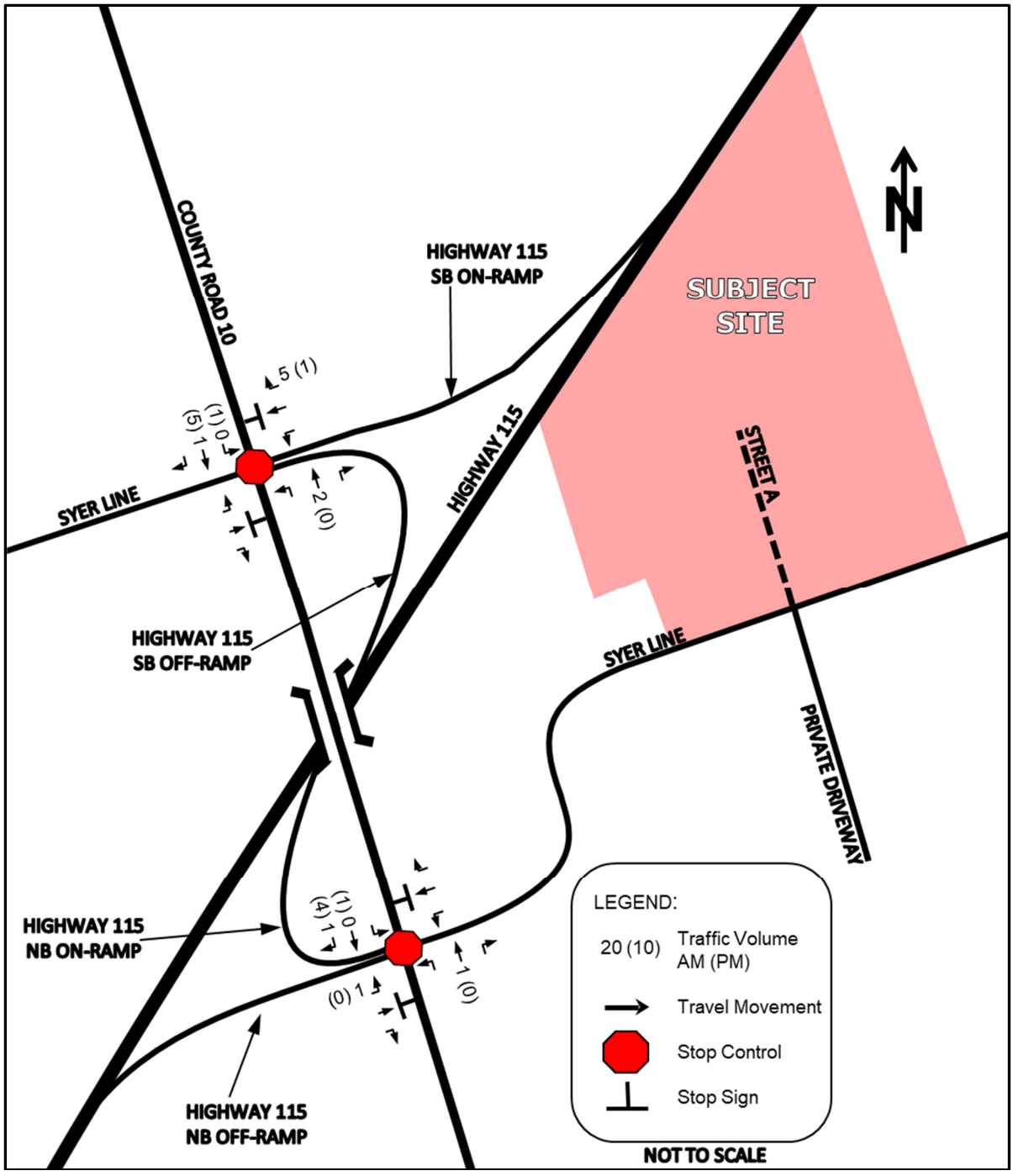


Figure 10 – Adjacent Development – Syer East Development Traffic Volumes (2037)

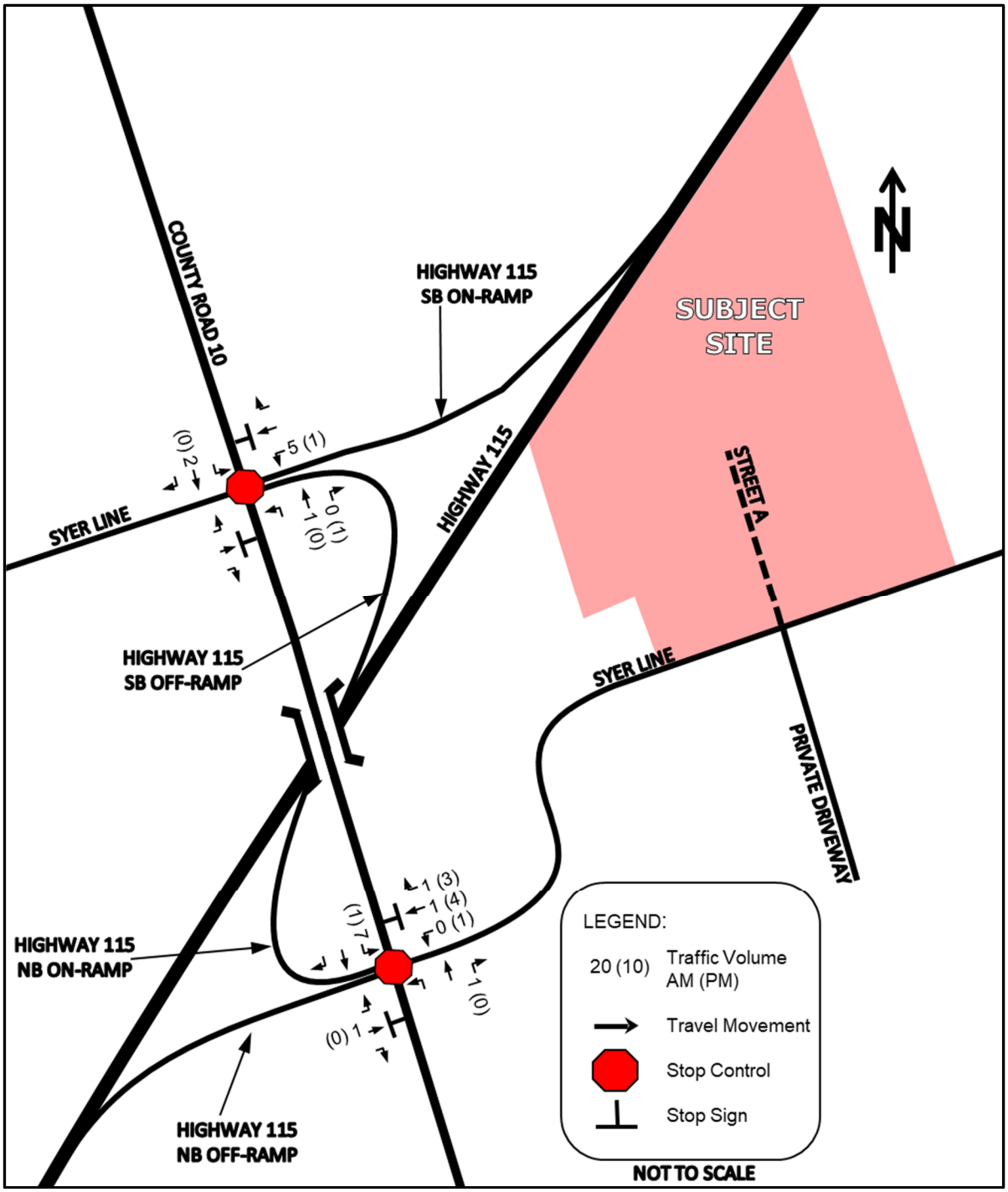


Figure 11 – Adjacent Development – CR10 Development Traffic Volumes (2037)

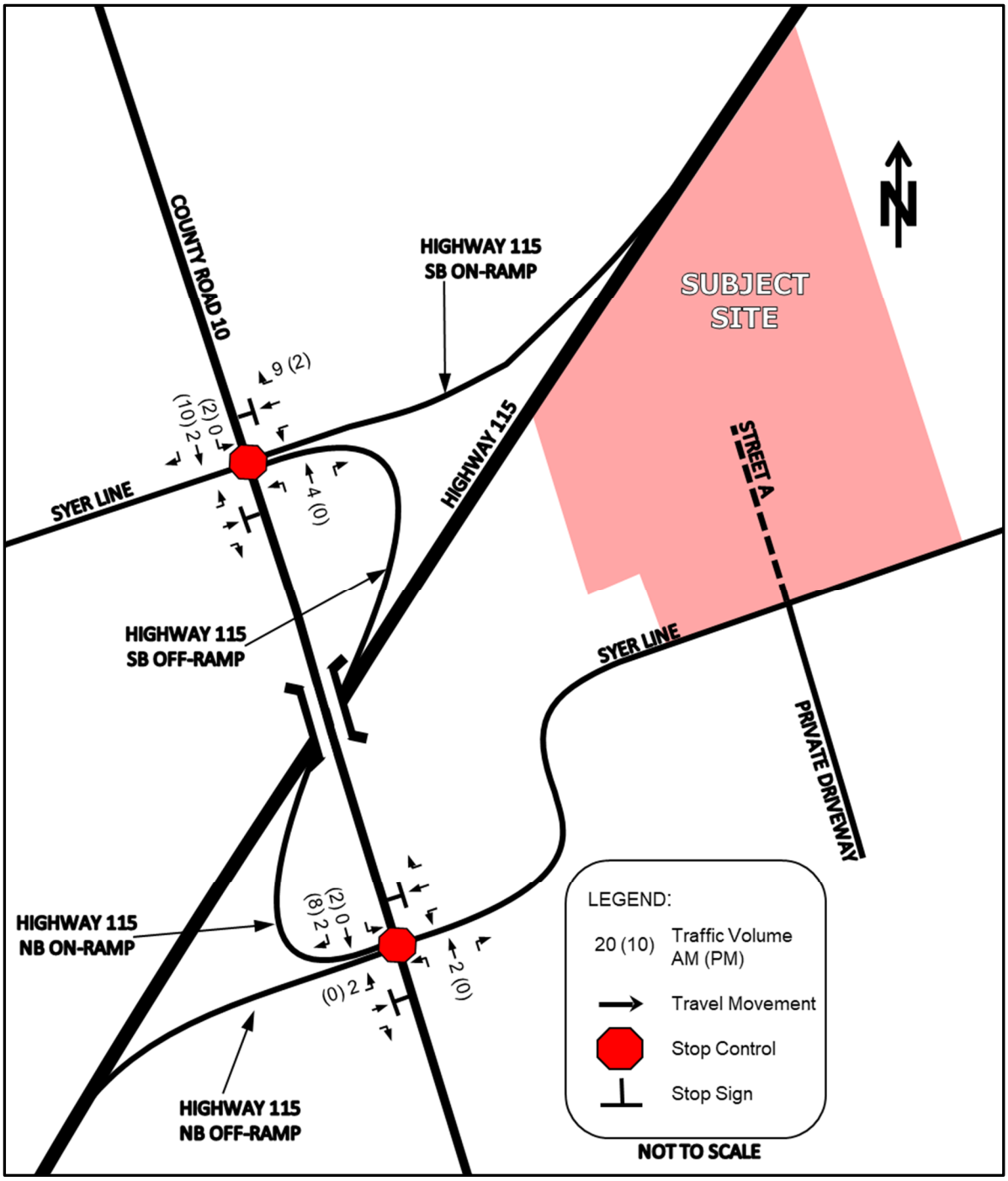


Figure 12 – Total Net Adjacent Development Traffic Volumes (2027)

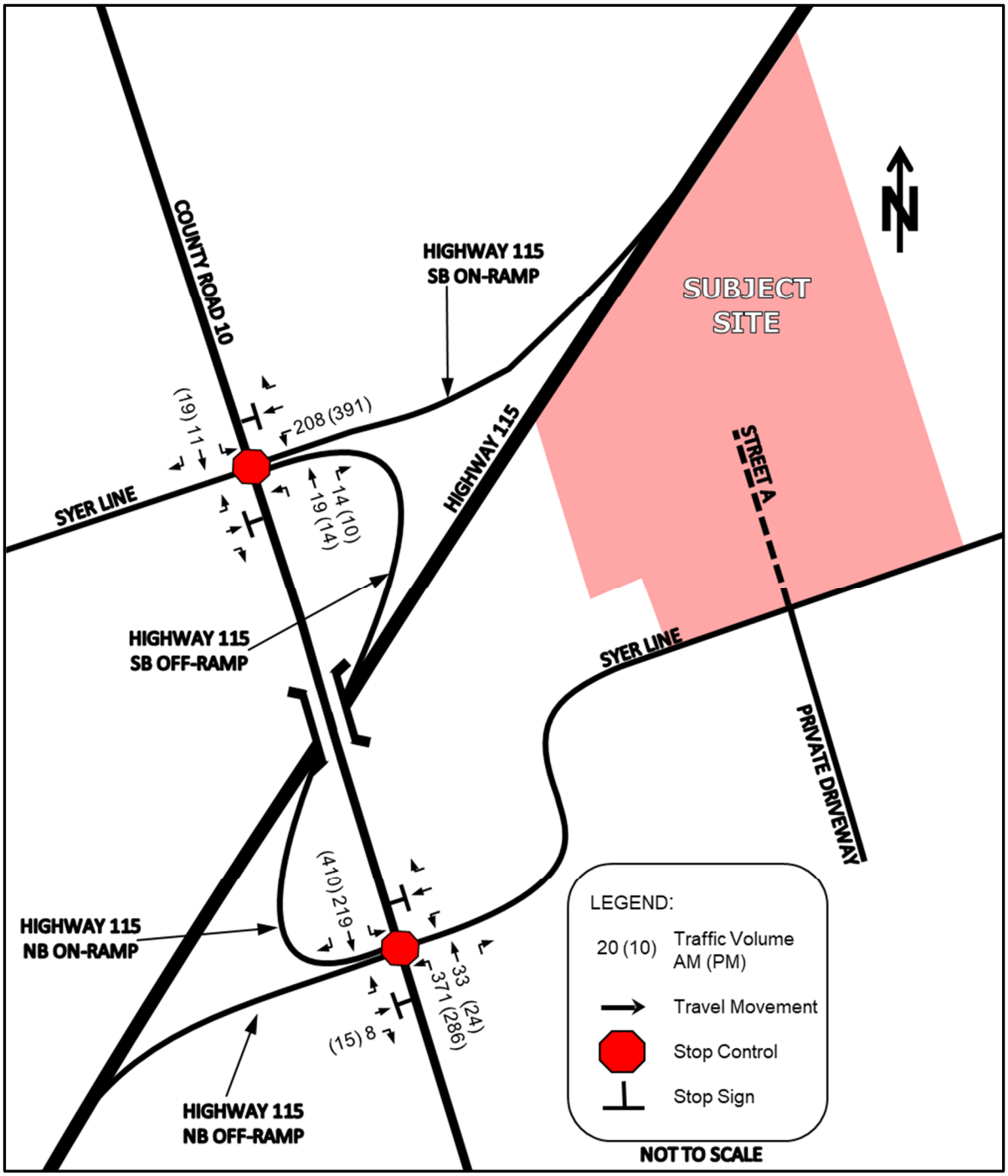


Figure 13 – Total Net Adjacent Development Traffic Volumes (2032)

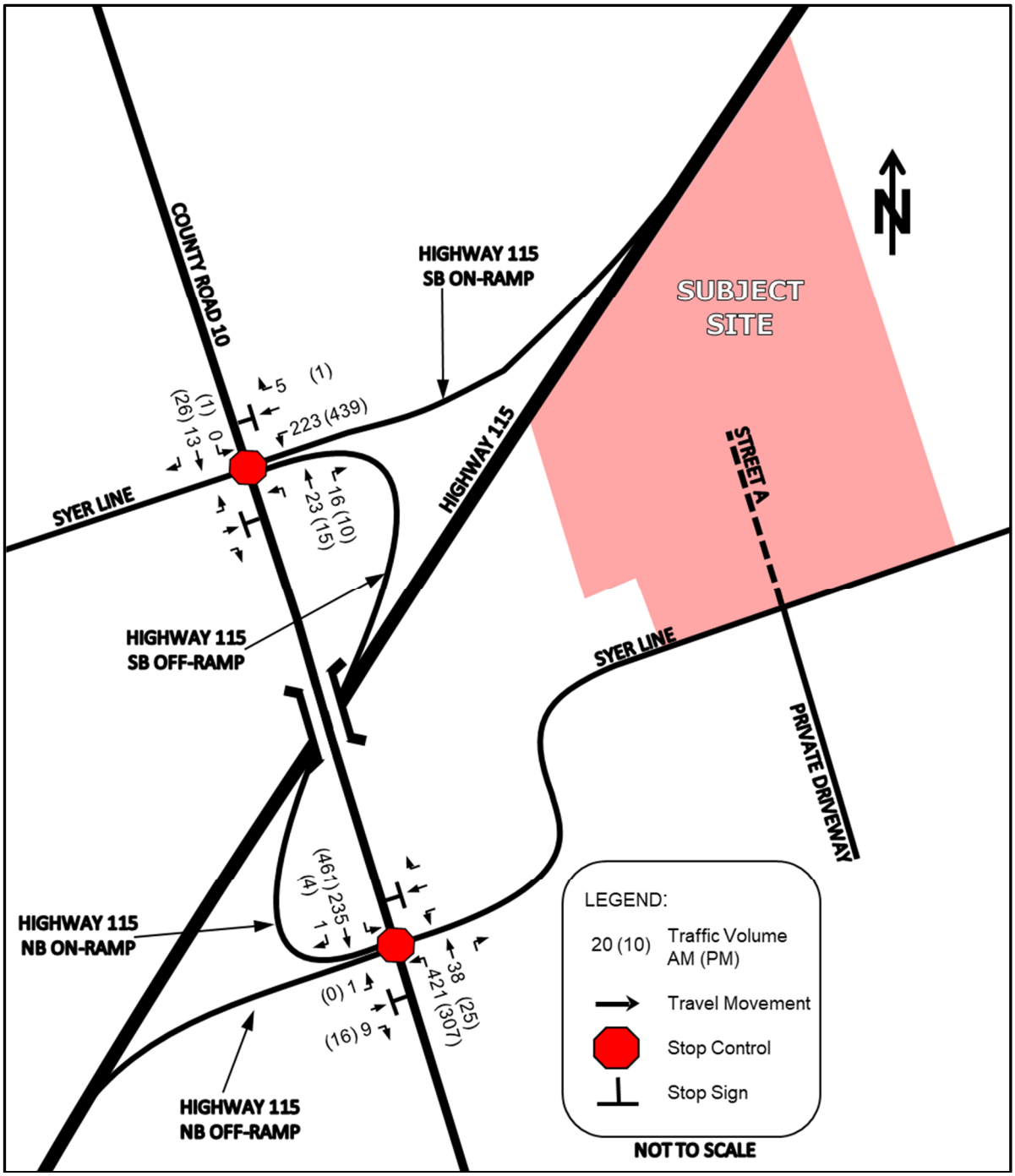
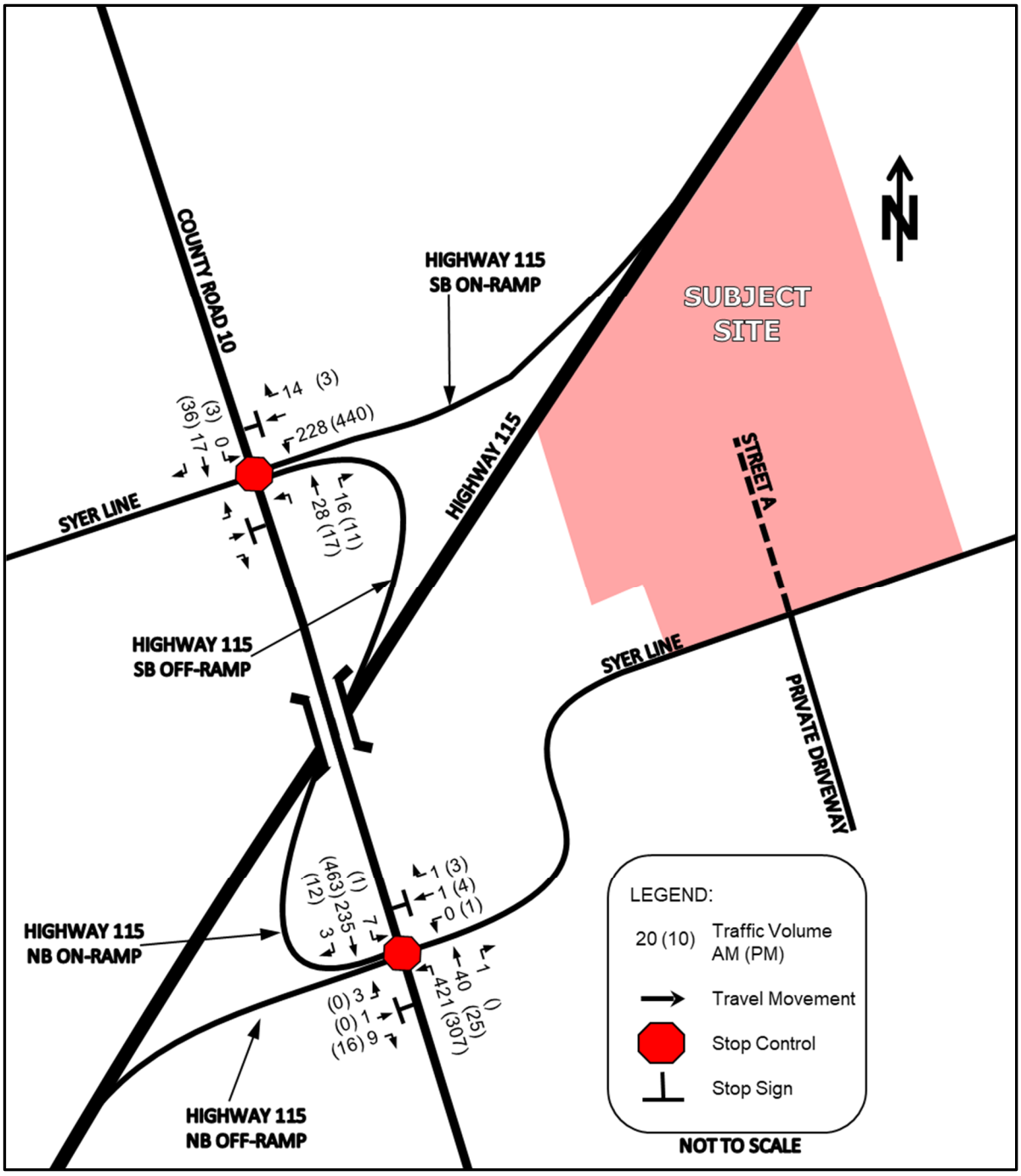


Figure 14 – Total Net Adjacent Development Traffic Volumes (2037)



2.5 Background Traffic Growth

A background traffic growth rate on Highway 115 was calculated based on the MTO's Traffic Volumes Program between 2006 – 2016. A background traffic growth rate of 2.3% was applied on Highway 115. Based on correspondence with the County a general background traffic growth rate of 2% was applied on County Road 10. A general background traffic growth rate of 2% was assumed for Syer Line.

2.6 Traffic Counts

Detailed turning movement traffic and pedestrian counts were obtained from the MTO at the following intersections: Highway 115 SB Ramp & Syer Line / County Road 10 and Highway 115 NB Ramp & Syer Line / County Road 10. Detailed turning movement traffic and pedestrian counts were obtained from past studies at the Larmer Line / County Road 10 intersection.

Table 4 summarizes the traffic count data collection information.

Table 4 – Traffic Count Data

Intersection (E-W Street / N-S Street)	**Count Date**	**AM Peak Hour**	**PM Peak Hour**	**Source**
Highway 115 SB Ramp & Syer Line / County Road 10	Tuesday, October 30th, 2018	07:15 – 08:15	16:30 – 17:30	MTO
Highway 115 NB Ramp & Syer Line / County Road 10	Tuesday, October 30th, 2018	07:30 – 08:30	16:15 – 17:15	MTO
Larmer Line / County Road 10	Tuesday, April 25th, 2017	07:30 – 08:30	16:30 – 17:30	JD Eng.*

* The traffic counts were completed by Ontario Traffic Inc. on behalf of JD Engineering for the Towerhill TIS.

Detailed traffic count data can be found in **Appendix C**. The peak hours of traffic generation for the study area intersections generally aligned with the anticipated peak hour of traffic generation by the proposed development. Although the AM and PM peak periods at all study area intersections did not exactly align, for the purpose of this report, we have assumed that the AM and PM peak hours are concurrent.

Heavy vehicle percentages from the traffic count data have also been included in the Synchro analysis.

The baseline 2021 traffic volume for County Road 10 at Larmer Line in the Bromont TIS and Towerhill TIS was higher than the adjusted 2021 traffic volumes on County Road 10, based on the 2018 traffic count data from MTO. In order to be conservative, our baseline 2021 traffic volume projections for County Road 10 incorporates the methodology applied in the Bromont TIS and Towerhill TIS (excerpts provided in **Appendix B**).

To determine the equivalent existing (2022) traffic volume, the background traffic growth rates noted in Section 2.5 were applied. The through traffic on County Road 10 in the study area was adjusted to match the north leg of traffic from the Larmer Line / County Road 10 intersection. The side street traffic at the County Road 10 study area intersection were based on the 2018 traffic count data from the MTO.

Figure 15 illustrates the existing (2022) AM and PM peak hour traffic volumes within the study area.

2.7 Horizon Year Traffic Volumes

The background (2027, 2032 and 2037) traffic volumes were estimated using the existing (2022) AM and PM peak hour traffic volumes and applying the background traffic growth rate discussed in Section 2.5 and the adjacent development traffic identified in Section 2.4.
The proposed Street A access has been assumed to be located directly across from the existing driveway on Syer Line, which provides access to one single detached unit. The traffic generation for the single detached unit has been based on the ITE Trip Generation Manual. The following ITE land use has been applied to estimate the traffic generated by the single detached unit:

- ITE land use 210 (Single-Family Detached Housing) – General Urban/Suburban Setting

Figures 16, 17 and **18** for the background (2027, 2032 and 2037) respectively, in the AM and PM peak hour traffic volumes for the study area (excluding the proposed development traffic volumes).

Figure 15 – Existing (2022) Traffic Volumes

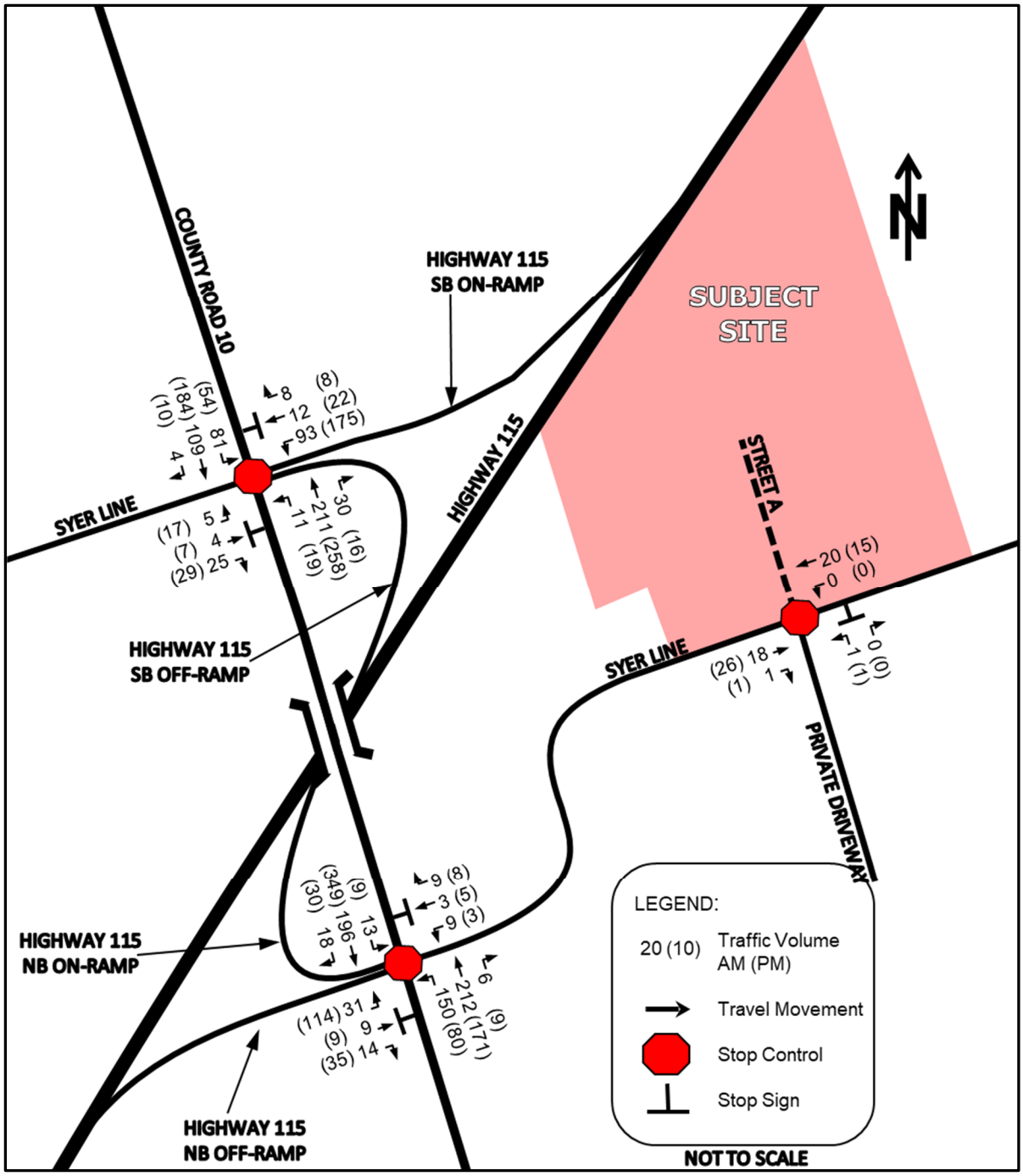


Figure 16 – Background (2027) Traffic Volumes

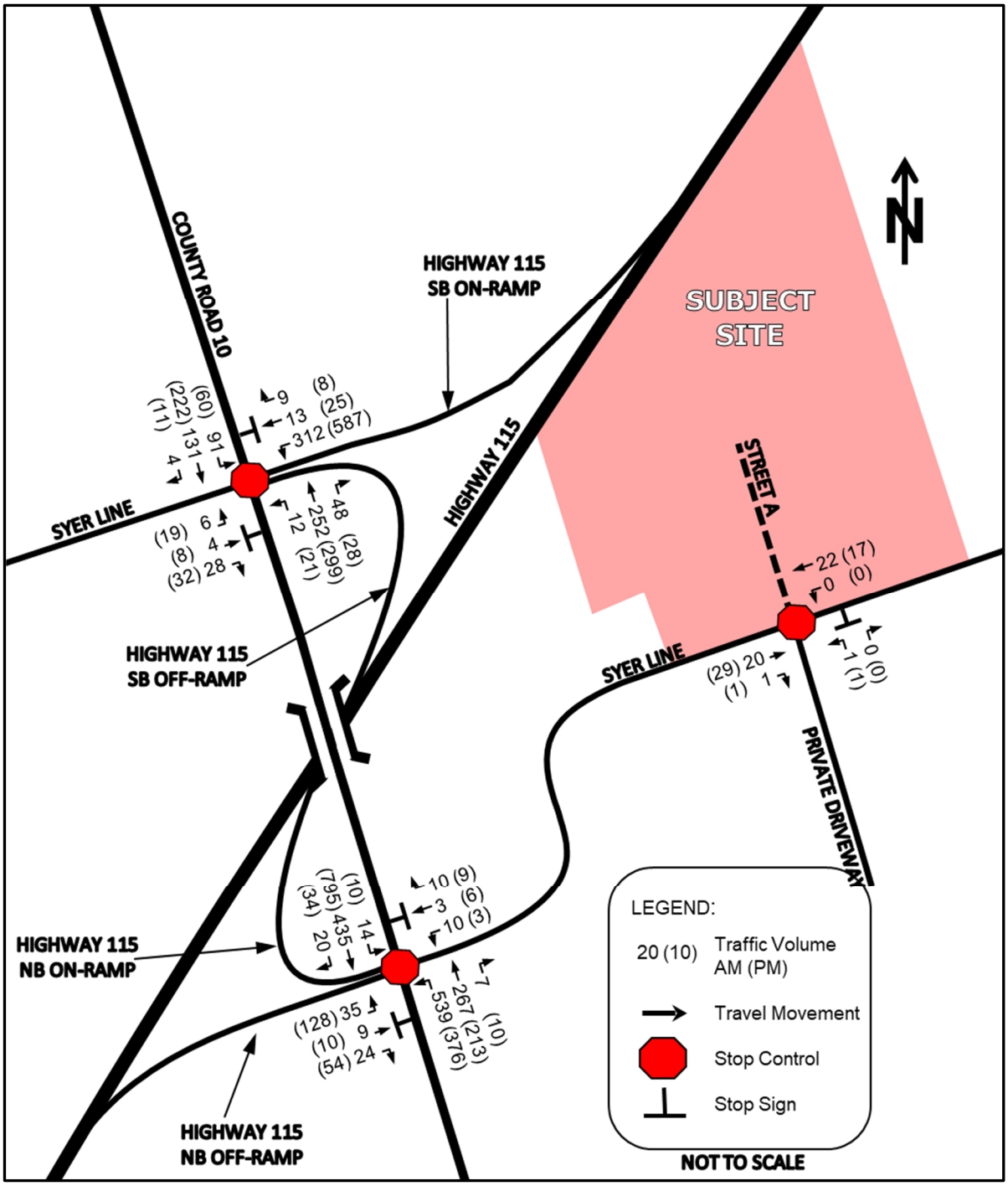


Figure 17 – Background (2032) Traffic Volumes

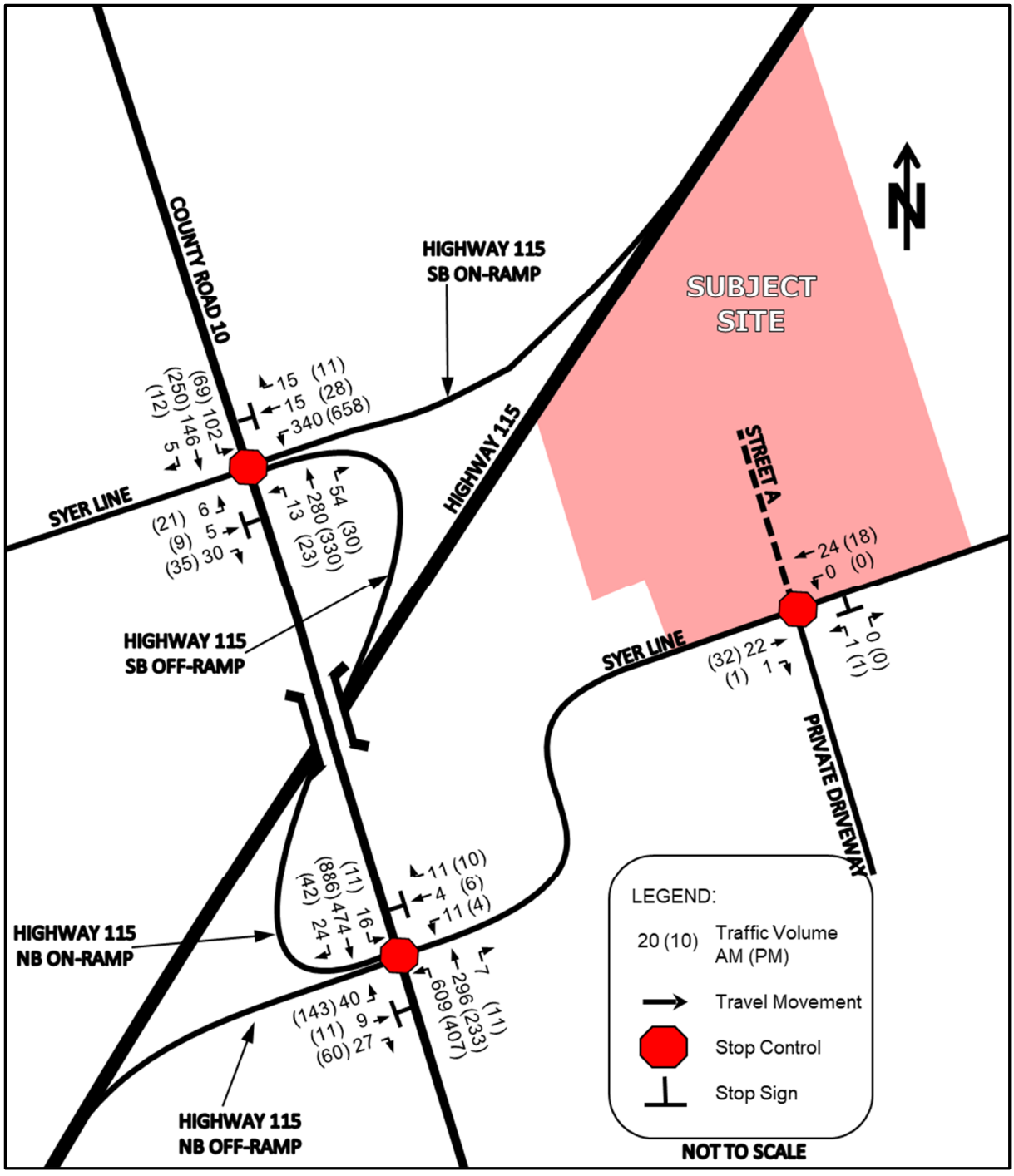
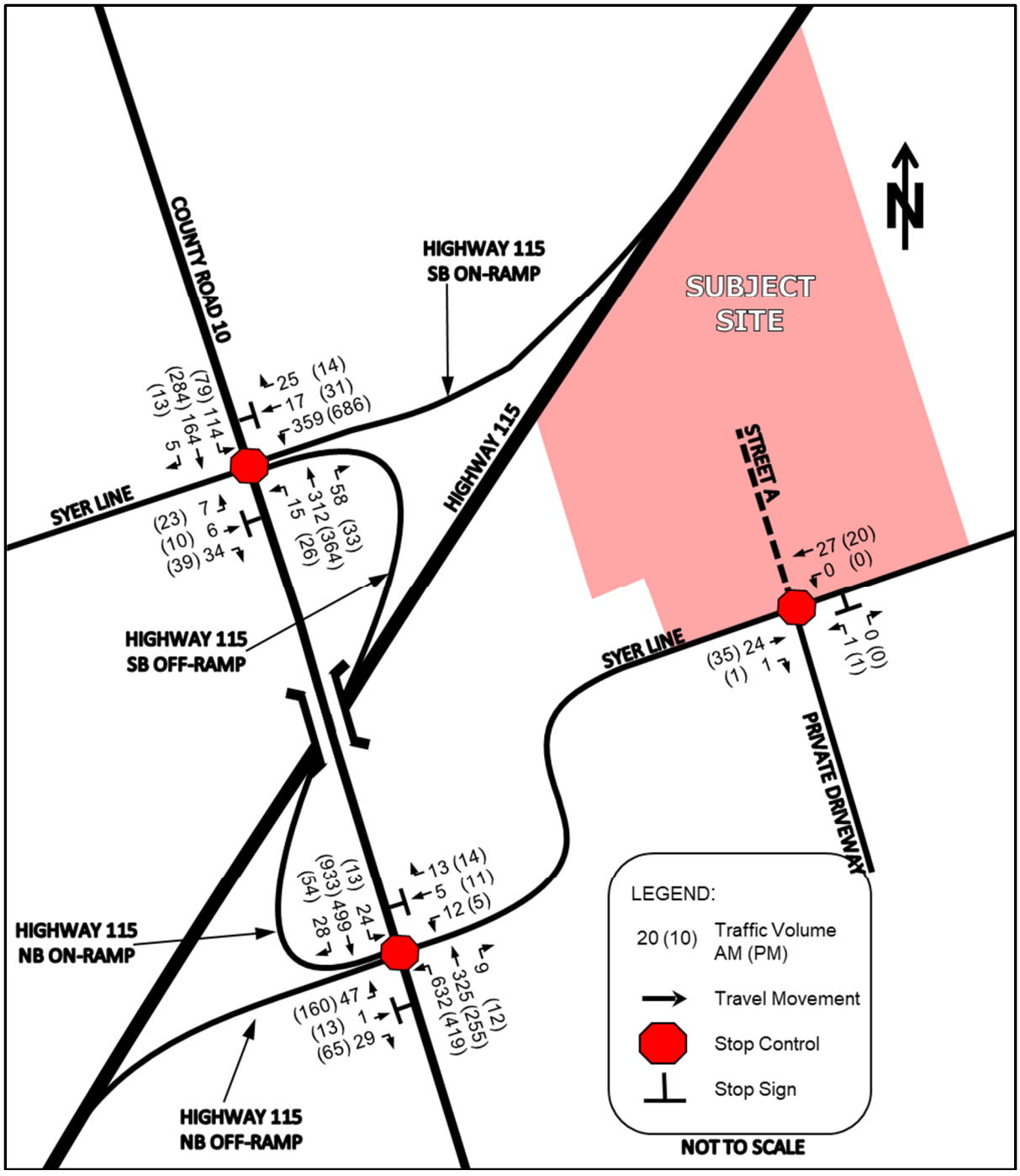


Figure 18 – Background (2037) Traffic Volumes



3 Intersection Operation without Proposed Development

3.1 Introduction

Intersection performance was measured using the traffic analysis software, Synchro 11, a deterministic model that employs Highway Capacity Manual and Intersection Capacity Utilization methodologies for analysing intersection operations. These procedures are accepted by provincial and municipal agencies throughout North America.

Synchro 11 enables the study area to be graphically defined in terms of streets and intersections, along with their geometric and traffic control characteristics. The user is able to evaluate both signalized and unsignalized intersections in relation to each other, thus not only providing level of service for the individual intersections, but also enabling an assessment of the impact the various intersections in a network have on each other in terms of spacing, traffic congestion, delay, and queuing.

Individual turning movements with a volume-to-capacity [V/C] ratio of 0.85 or greater are considered to be critical movements and have been highlighted in the LOS tables.

The intersection operations were also evaluated in terms of the LOS. LOS is a common measure of the quality of performance at an intersection and is defined in terms of vehicular delay. This delay includes deceleration delay, queue move-up time, stopped delay, and acceleration delay. LOS is expressed on a scale of A through F, where LOS A represents very little delay (i.e. less than 10 seconds per vehicle) and LOS F represents very high delay (i.e. greater than 50 seconds per vehicle for a stop sign controlled intersection and greater than 80 seconds per vehicle for a signalized intersection).

The LOS criteria for signalized and stop sign controlled intersections are shown in **Table 5**. A description of traffic performance characteristics is included for each LOS.

Table 5 – Level of Service Criteria for Intersections

LOS	LOS Description	Control Delay (seconds per vehicle)	
		Signalized Intersections	**Stop Controlled Intersections**
A	Very low delay; most vehicles do not stop (**Excellent**)	less than 10.0	less than 10.0
B	Higher delay; more vehicles stop (**Very Good**)	between 10.0 and 20.0	between 10.0 and 15.0
C	Higher level of congestion; number of vehicles stopping is significant, although many still pass through intersection without stopping **(Good**)	between 20.0 and 35.0	between 15.0 and 25.0
D	Congestion becomes noticeable; vehicles must sometimes wait through more than one red light; many vehicles stop (**Satisfactory**)	between 35.0 and 55.0	between 25.0 and 35.0
E	Vehicles must often wait through more than one red light; considered by many agencies to be the limit of **acceptable** delay	between 55.0 and 80.0	between 35.0 and 50.0
F	This level is considered to be unacceptable to most drivers; occurs when arrival flow rates exceed the capacity of the intersection (**Unacceptable**)	greater than 80.0	greater than 50.0

3.2 Existing (2022) Intersection Operation

The results of the LOS analysis under existing (2022) traffic volumes during the AM and PM peak hour can be found below in **Table 6**. Existing intersection geometry and traffic control have been utilized for this scenario. Detailed output of the Synchro analysis can be found in **Appendix D**.

Table 6 – Existing (2022) LOS

Location (E-W Street / N-S Street)	Weekday AM Peak Hour					Weekday PM Peak Hour				
	V/C	Delay (s)	LOS	95th Percentile Queue		V/C	Delay (s)	LOS	95th Percentile Queue	
				Model	Storage				Model	Storage
Highway 115 SB Ramp & Syer Line / County Road 10 (unsignalized)	-	5.9	A	-	-	-	9.3	A	-	-
EB	0.06	11.0	B	2	-	0.11	13.0	B	3	-
WB	0.37	20.8	C	14	-	0.61	30.2	D	31	-
NB	0.01	0.4	A	1	-	0.01	0.6	A	1	-
SBL	0.08	8.1	A	2	82	0.04	8.0	A	2	82
SBTR	0.08	0.0	A	0	-	0.12	0.0	A	0	-
Highway 115 NB Ramp & Syer Line / County Road 10 (unsignalized)	-	4.0	A	-	-	-	6.1	B	-	-
EB	0.18	20.3	C	6	-	0.49	25.6	D	21	-
WB	0.08	16.7	C	2	-	0.04	13.6	B	1	-
NBL	0.14	8.2	A	4	85	0.07	8.3	A	2	85
NBTR	0.15	0.0	A	0	-	0.11	0.0	A	0	-
SB	0.01	0.5	A	1	-	0.01	0.2	A	1	-

The results of the LOS analysis indicate that all intersections are operating within the typical design limits noted in Section 3.1.

There are no issues regarding the anticipated queue for all movements in the study area.

An analysis was completed for left turn movements at the unsignalized intersections in the study area, based on the criteria outlined in Appendix 9A of the Ontario Ministry of Transportation Design Supplement for TAC Geometric Design Guide for Canadian Roads June 2017 [MTO DS]. Based off the above noted criteria, a left-turn lane is warranted in the southbound direction at the Highway 115 NB Ramp & Syer Line / County Road 10 intersection (results provided in **Appendix G**); however, no improvements are recommended as left-turn movements are low (under 2.5%) and the eastbound left turn movements would only block through movements for approximately 2% of the time during the critical PM peak hour.

A review of the need for an auxiliary right turn lane at the unsignalized intersections in the study area was completed as part of our analysis. The results of the Synchro analysis indicate that there is excess capacity for all movements; consequently, auxiliary right turn lanes are not recommended.

Based on the Ontario Traffic Manual Book 12 *Signal Justification*, traffic signals are not warranted at unsignalized intersections in the study area (results are provided in **Appendix H**).

No improvements are recommended within the study area for the existing horizon year.

3.3 Background (2027) Intersection Operation

The results of the LOS analysis under background (2027) traffic volumes during the AM and PM peak hour can be found below in **Table 7**. Existing intersection geometry and traffic control have been utilized for this scenario. Detailed output of the Synchro analysis can be found in **Appendix E**.

Table 7 – Background (2027) LOS

Location (E-W Street / N-S Street)	Weekday AM Peak Hour					Weekday PM Peak Hour				
	V/C	Delay (s)	LOS	95th Percentile Queue		V/C	Delay (s)	LOS	95th Percentile Queue	
				Model	Storage				Model	Storage
Highway 115 SB Ramp & Syer Line / County Road 10 (unsignalized)	-	83.4	B	-	-	-	289.3	D	-	-
EB	0.08	11.8	B	2	-	0.14	14.6	B	4	-
WB	1.37	223.4	F	166	-	2.28	613.2	F	405	-
NB	0.01	0.4	A	1	-	0.02	0.6	A	1	-
SBL	0.09	8.3	A	3	82	0.05	8.1	A	2	82
SBTR	0.09	0.0	A	0	-	0.14	0.0	A	0	-
Highway 115 NB Ramp & Syer Line / County Road 10 (unsignalized)	-	65.3	C	-	-	-	1173.8	F	-	-
EB	2.97	1238.9	F	70	-	5.58	Error	F	Error	-
WB	0.98	361.9	F	26	-	0.35	110.5	F	111	-
NBL	0.62	14.1	B	36	85	0.51	14.3	B	15	85
NBTR	0.19	0.0	A	0	-	0.14	0.0	A	0	-
SB	0.01	0.4	A	1	-	0.01	0.2	A	1	-

The LOS analysis indicates that the Highway 115 SB Ramp & Syer Line / County Road 10 and Highway 115 NB Ramp & Syer Line / County Road 10 intersections are operating outside the typical design limits as noted in Section 3.1. Based on the Ontario Traffic Manual Book 12 *Signal Justification*, underground traffic signal provisions is warranted at the Highway 115 SB Ramp & Syer Line / County Road 10 intersection and is not warranted at the Highway 115 NB Ramp & Syer Line / County Road 10 intersection (results are provided in **Appendix H**). Based on the anticipated control delay for the Syer Line approaches, it is recommended both intersections are signalized. It is noted that signalization will be warranted based on the future developments in the Millbrook community; it is recommended the MTO review the traffic at both intersections closer to the 2027 horizon year as the development in the Millbrook community progresses, to determine the exact timing of the signalization.

To accommodate the above noted signalization, it is recommended the signal heads accommodate a northbound protected + permissive left turn phase at the Highway 115 NB Ramp & Syer Line / County Road 10 intersection

The results of the LOS analysis under background (2027) traffic volumes with the above noted improvements during the AM and PM peak hour can be found below in **Table 8**. Detailed output of the Synchro analysis can be found in **Appendix E**.

Table 8 – Background (2027) LOS with Improvements

Location (E-W Street / N-S Street)	Weekday AM Peak Hour					Weekday PM Peak Hour				
	V/C	Delay (s)	LOS	95th Percentile Queue		V/C	Delay (s)	LOS	95th Percentile Queue	
				Model	Storage				Model	Storage
Highway 115 SB Ramp & Syer Line / County Road 10 (signalized)	0.63	27.4	C	-	-	0.85	38.8	D	-	-
EB	0.04	12.1	B	6	-	0.07	8.2	A	8	-
WB	0.61	22.3	C	84	-	0.85	29.1	C	213	-
NB	0.65	34.6	C	92	-	0.83	57.8	E	136	-
SBL	0.42	31.0	C	33	82	0.43	45.2	D	29	82
SBTR	0.26	25.5	C	39	-	0.55	42.5	D	80	-
Highway 115 NB Ramp & Syer Line / County Road 10 (signalized)	0.81	18.2	B	-	-	0.89	32.9	C	-	-
EB	0.23	42.2	D	15	-	0.81	63.1	E	71	-
WB	0.14	41.3	D	11	-	0.04	37.9	D	9	-
NBL	0.85	17.7	B	86	85	0.89	30.7	C	80	85
NBTR	0.26	3.0	A	23	-	0.20	5.8	A	31	-
SB	0.69	23.4	C	116	-	0.90	34.0	C	297	-

The results of the LOS analysis indicate that the Highway 115 SB Ramp & Syer Line / County Road 10 and Highway 115 NB Ramp & Syer Line / County Road 10 intersections are operating marginally outside the typical design limits as noted in Section 3.1. Since the delay is under LOS F and the anticipated queuing is not anticipated to cause any notable issues as noted below, no further improvements are recommended.

The anticipated queuing for northbound left turn movements is anticipated to extend past the existing storage length; however, the excess queue can be accommodated by the existing taper length.

There are no issues regarding the anticipated queue for all other movements in the study area.

No further infrastructure improvements are recommended for the background (2027) scenario within the study area.

3.4 Background (2032) Intersection Operation

The results of the LOS analysis under background (2032) traffic volumes during the AM and PM peak hour can be found below in **Table 9**. The recommended improvements identified in Section 3.3 have been utilized in this scenario. Detailed output of the Synchro analysis can be found in **Appendix E**.

Table 9 – Background (2032) LOS

Location (E-W Street / N-S Street)	Weekday AM Peak Hour					Weekday PM Peak Hour				
	V/C	Delay (s)	LOS	95th Percentile Queue		V/C	Delay (s)	LOS	95th Percentile Queue	
				Model	Storage				Model	Storage
Highway 115 SB Ramp & Syer Line / County Road 10 (signalized)	0.69	29.8	C	-	-	0.96	51.2	D	-	-
EB	0.04	12.2	B	7	-	0.07	8.2	A	9	-
WB	0.68	24.7	C	97	-	0.97	45.9	D	259	-
NB	0.72	37.6	D	105	-	0.93	72.2	E	160	-
SBL	0.51	34.9	C	38	82	0.56	54.1	D	37	82
SBTR	0.30	26.0	C	43	-	0.62	44.8	D	91	-
Highway 115 NB Ramp & Syer Line / County Road 10 (signalized)	0.95	30.5	C	-	-	1.04	58.5	E	-	-
EB	0.32	43.2	D	18	-	0.85	67.0	E	87	-
WB	0.16	41.3	D	12	-	0.04	37.3	D	9	-
NBL	0.99	45.3	D	105	85	1.07	79.9	E	111	85
NBTR	0.28	3.2	A	27	-	0.22	6.6	A	34	-
SB	0.76	26.5	C	137	-	1.03	61.1	E	354	-

The results of the LOS analysis indicate that the Highway 115 SB Ramp & Syer Line / County Road 10 and Highway 115 NB Ramp & Syer Line / County Road 10 intersections are operating outside the typical design limits as noted in Section 3.1. It is noted the southbound traffic is beyond the typical planning capacity for a single lane arterial roadway (850 vph) in the southbound direction in the PM peak hour.

Due to the long-term estimates (10 years) and the increase in traffic in the study area being dependent on the adjacent development in the Milbrook community as noted in Section 2.4, it is recommended the MTO and County monitor the queuing on County Road 10 and on the Highway 115 ramps as the future Millbrook developments become fully built-out and occupied, to determine if infrastructure improvements are warranted. For the purposes of this report, the following improvements should be considered to improve the capacity issues at both intersections:

- Highway 115 SB Ramp & Syer Line / County Road 10
  - Widen the SB Off-Ramp for the construction of a westbound left turn lane with 150 metre storage length, 40 parallel length and 100 metre taper length and
  - Provide a protected + permissive westbound left turn phase.
- Highway 115 NB Ramp & Syer Line / County Road 10
  - Widen the County Road 10, north of the Highway 115 NB Ramp to provide two southbound lanes. The southbound configuration at the intersection should include a through / left lane and a through / right lane.

The results of the LOS analysis under background (2032) traffic volumes with the above noted improvements during the AM and PM peak hour can be found below in **Table 10**. Detailed output of the Synchro analysis can be found in **Appendix E**.

Table 10 – Background (2032) LOS with Improvements

Location (E-W Street / N-S Street)	Weekday AM Peak Hour					Weekday PM Peak Hour				
	V/C	Delay (s)	LOS	95th Percentile Queue		V/C	Delay (s)	LOS	95th Percentile Queue	
				Model	Storage				Model	Storage
Highway 115 SB Ramp & Syer Line / County Road 10 (signalized)	0.64	28.4	C	-	-	0.83	33.7	C	-	-
EB	0.04	15.4	B	8	-	0.10	31.2	C	18	-
WBL	0.65	27.7	C	98	190	0.84	26.5	C	156	190
WBTR	0.04	15.8	B	8	-	0.04	10.9	B	8	-
NB	0.64	33.2	C	105	-	0.76	46.6	D	130	-
SBL	0.43	29.8	C	37	82	0.38	36.9	D	30	82
SBTR	0.26	24.3	C	43	-	0.52	36.5	D	83	-
Highway 115 NB Ramp & Syer Line / County Road 10 (signalized)	0.79	21.2	C	-	-	0.84	32.9	C	-	-
EB	0.32	43.2	D	18	-	0.84	64.6	E	86	-
WB	0.16	41.3	D	12	-	0.04	37.0	D	9	-
NBL	0.81	17.7	B	123	85	0.81	32.9	C	103	85
NBTR	0.28	3.2	A	27	-	0.22	6.7	A	35	-
SB	0.65	32.1	C	72	-	0.76	32.5	C	168	-

The results of the LOS analysis indicate that all intersections are operating within the typical design limits noted in Section 3.1.

The anticipated queue for westbound left turn movements at the Highway 115 SB Ramp & Syer Line / County Road 10 intersection and northbound left turn movements at the Highway 115 NB Ramp & Syer Line / County Road 10 intersection extend past the existing / proposed storage length; however, the excess queue can be accommodated by the taper length and will clear by the end of each phase.

There are no issues regarding the anticipated queue for all other movements in the study area.

No further infrastructure improvements are recommended for the background (2032) scenario within the study area.

3.5 Background (2037) Intersection Operation

The results of the LOS analysis under background (2037) traffic volumes during the AM and PM peak hour can be found below in **Table 11**. The recommended improvements identified in Section 3.3 and 3.4 have been utilized in this scenario. Detailed output of the Synchro analysis can be found in **Appendix E**.

Table 11 – Background (2037) LOS

Location (E-W Street / N-S Street)	Weekday AM Peak Hour					Weekday PM Peak Hour				
	V/C	Delay (s)	LOS	95th Percentile Queue		V/C	Delay (s)	LOS	95th Percentile Queue	
				Model	Storage				Model	Storage
Highway 115 SB Ramp & Syer Line / County Road 10 (signalized)	0.70	30.4	C	-	-	0.88	38.2	D	-	-
EB	0.05	15.4	B	8	-	0.12	31.7	C	19	-
WBL	0.69	29.4	C	106	190	0.88	30.6	C	176	190
WBTR	0.05	15.9	B	9	-	0.05	10.9	B	9	-
NB	0.72	36.3	D	120	-	0.85	53.6	D	160	-
SBL	0.52	33.6	C	43	82	0.48	41.5	D	35	82
SBTR	0.30	24.8	C	48	-	0.59	38.5	D	96	-
Highway 115 NB Ramp & Syer Line / County Road 10 (signalized)	0.87	25.5	C	-	-	0.89	39.6	D	-	-
EB	0.59	49.5	D	27	-	0.89	72.5	E	101	-
WB	0.15	40.7	D	12	-	0.06	36.6	D	12	-
NBL	0.88	25.1	C	172	85	0.87	43.6	D	117	85
NBTR	0.32	3.7	A	36	-	0.25	7.4	A	38	-
SB	0.72	35.1	D	83	-	0.85	38.8	D	187	-

The results of the LOS analysis indicate that the Highway 115 SB Ramp & Syer Line / County Road 10 and Highway 115 NB Ramp & Syer Line / County Road 10 intersections are operating marginally outside the typical design limits as noted in Section 3.1. Since the delay is under LOS F and the anticipated queuing is not anticipated to cause any notable issues as noted below, no further improvements are recommended.

The anticipated queue for westbound left turn movements at the Highway 115 SB Ramp & Syer Line / County Road 10 intersection and northbound left turn movements at the Highway 115 NB Ramp & Syer Line / County Road 10 intersection extend past the existing / proposed storage length; however, the excess queue can be accommodated by the taper length and will clear by the end of each phase.

There are no issues regarding the anticipated queue for all other movements in the study area.

No additional infrastructure improvements are recommended for the background (2037) scenario within the study area.

4 Proposed Development Traffic Generation and Assignment

4.1 Traffic Generation

The traffic generation for the Subject Site has been based on the ITE Trip Generation Manual. The following ITE land use has been applied to estimate the traffic from the proposed development:

- ITE land use 110 (General Light Industrial) – General Urban/Suburban Setting

The estimated trip generation of the proposed development is illustrated below in **Table 12**. The AM and PM peak traffic generation for the proposed development does not exactly align with the AM and PM peak hour in the traffic counts; consequently, we have applied the peak hour of adjacent street traffic values provided in the ITE Trip Generation Manual.

Table 12 – Estimated Traffic Generation of Proposed Development

Land Use	Size	AM Peak Hour			PM Peak Hour		
		IN	OUT	TOTAL	IN	OUT	TOTAL
General Light Industrial ITE Land Use: 110	161 employees*	73	15	88	18	62	80

* An employment density of 5 jobs per hectare was assumed based on the land use of the Subject Site. Based on this assumption, the Subject Site lot (32.02 hectares) is estimated to employ 161 employees.

No transportation modal split has been applied to the above-noted traffic generation calculation in order to be conservative.

4.2 Traffic Assignment

For the purposes of this study, it has been assumed that all traffic generated by the proposed development will be new traffic and would not be in the study area if the development was not constructed.

The ITE data provides the anticipated percentage of new traffic entering and exiting during the peak hour.

The distribution of traffic for autombile trips has been calculated based on the 2016 TTS data for the Township retrieved using the TTS IDRS (output attached as **Appendix I**). TTS data provides historical origin and destination work trip percentages for specific areas within the Town and southern Ontario.

Traffic distribution for the trips generated by the proposed development during the AM and PM peak hour is expected to generally follow commuter travel patterns. Our analysis is based on ingress traffic during the AM peak hour. Logically, the distribution of ingress traffic will follow the inverse of the exiting traffic distribution. For each of the individual areas identified in the TTS data, we have selected the probable route of travel, assuming that people will select their route primarily based on travel time.

Table 13 illustrates the traffic distribution for the automobile trips in the proposed development, using the methodology outlined above.

Table 13 – Proposed Development Traffic Distribution

Travel Direction (to/from)	Percent of Total Traffic Generation
West via Highway 115	10%
East via Highway 115	52%
South via County Road 10	12%
North via County Road 10	26%
Total	**100%**

Using the traffic distribution patterns noted above, the traffic assignment for the proposed development was calculated for the AM and PM peak hour and is illustrated in **Figures 19**.

4.3 Total Horizon Year Traffic Volumes with the Proposed Development

For the total (2027, 2032 and 2037) horizon year traffic volumes, the proposed development traffic was added to the background (2027, 2032 and 2037) traffic volumes. The resulting total (2027, 2032 and 2037) horizon year traffic volumes for the AM and PM peak hour are illustrated in **Figures 20, 21** and **22** respectively.

Figure 19 – Proposed Development Traffic Assignment

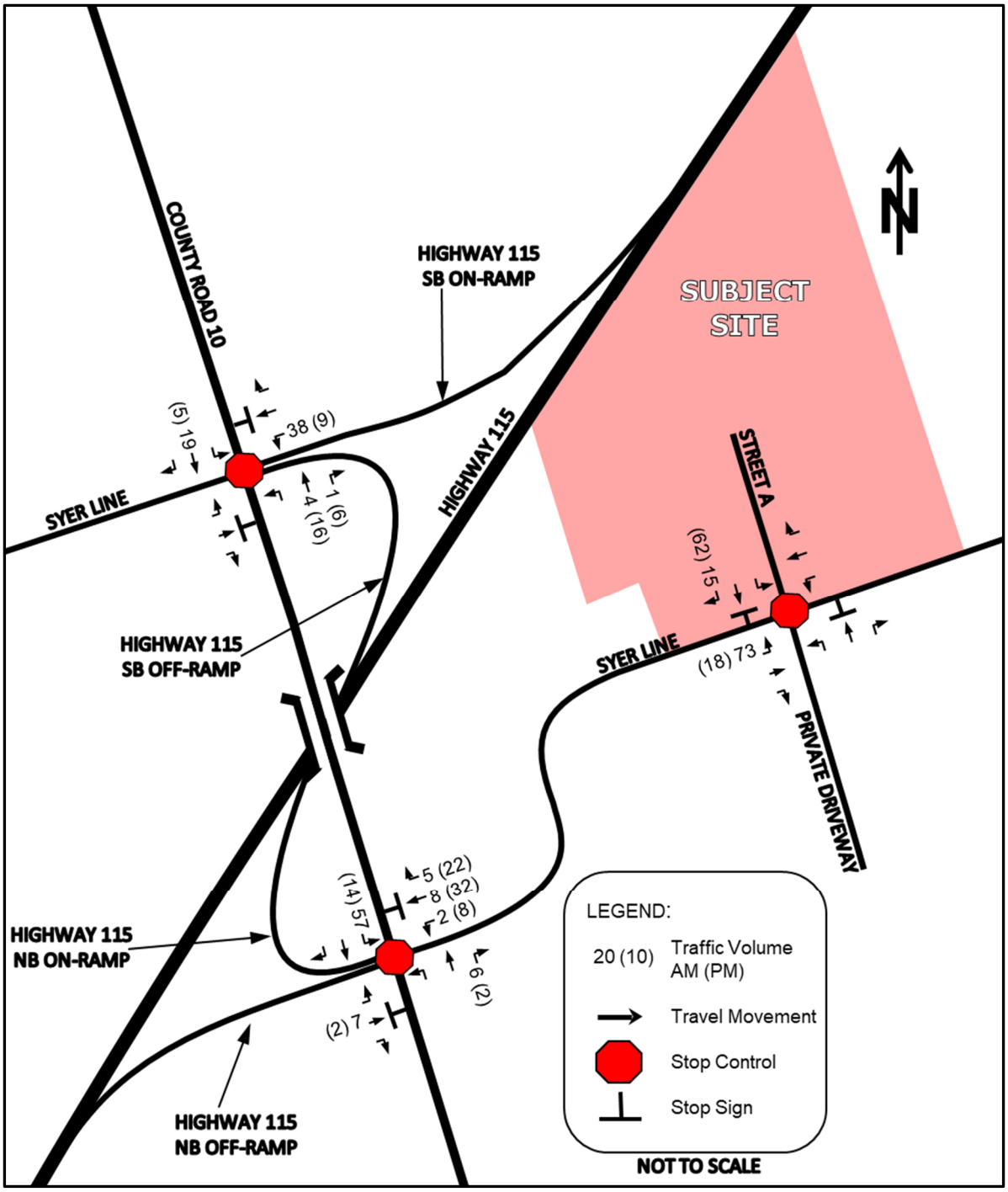


Figure 20 – Total (2027) Traffic Volumes

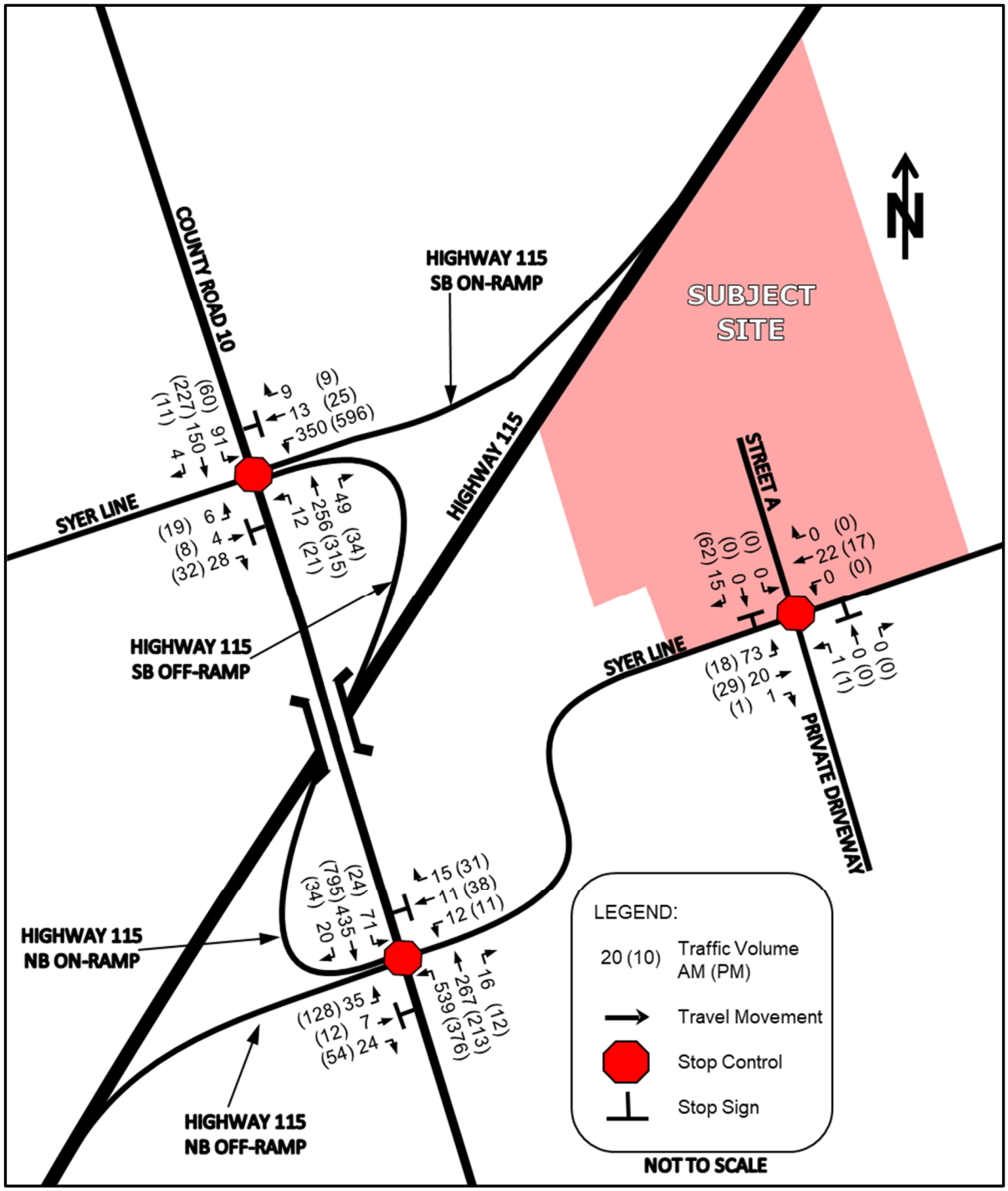


Figure 21 – Total (2032) Traffic Volumes

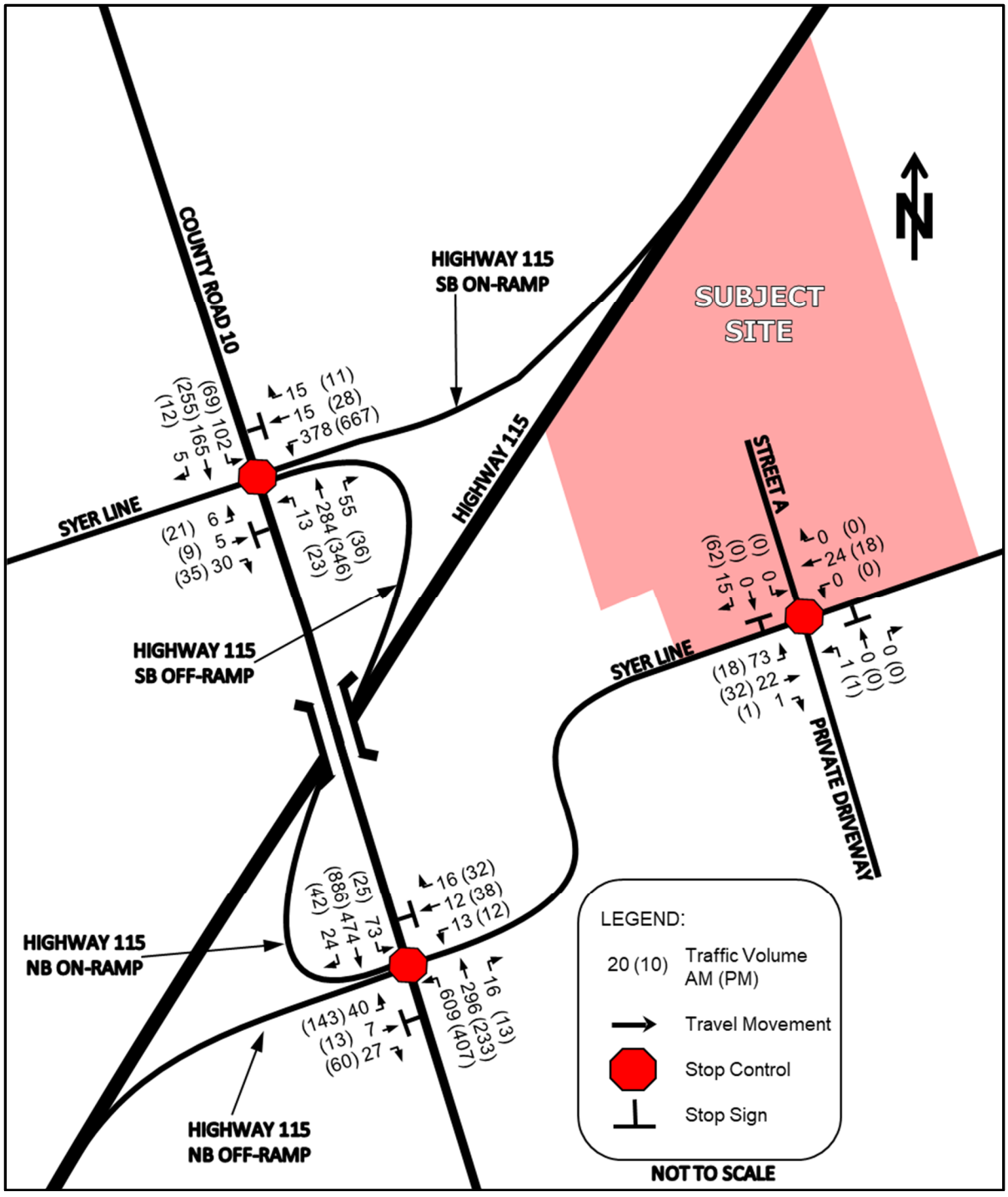
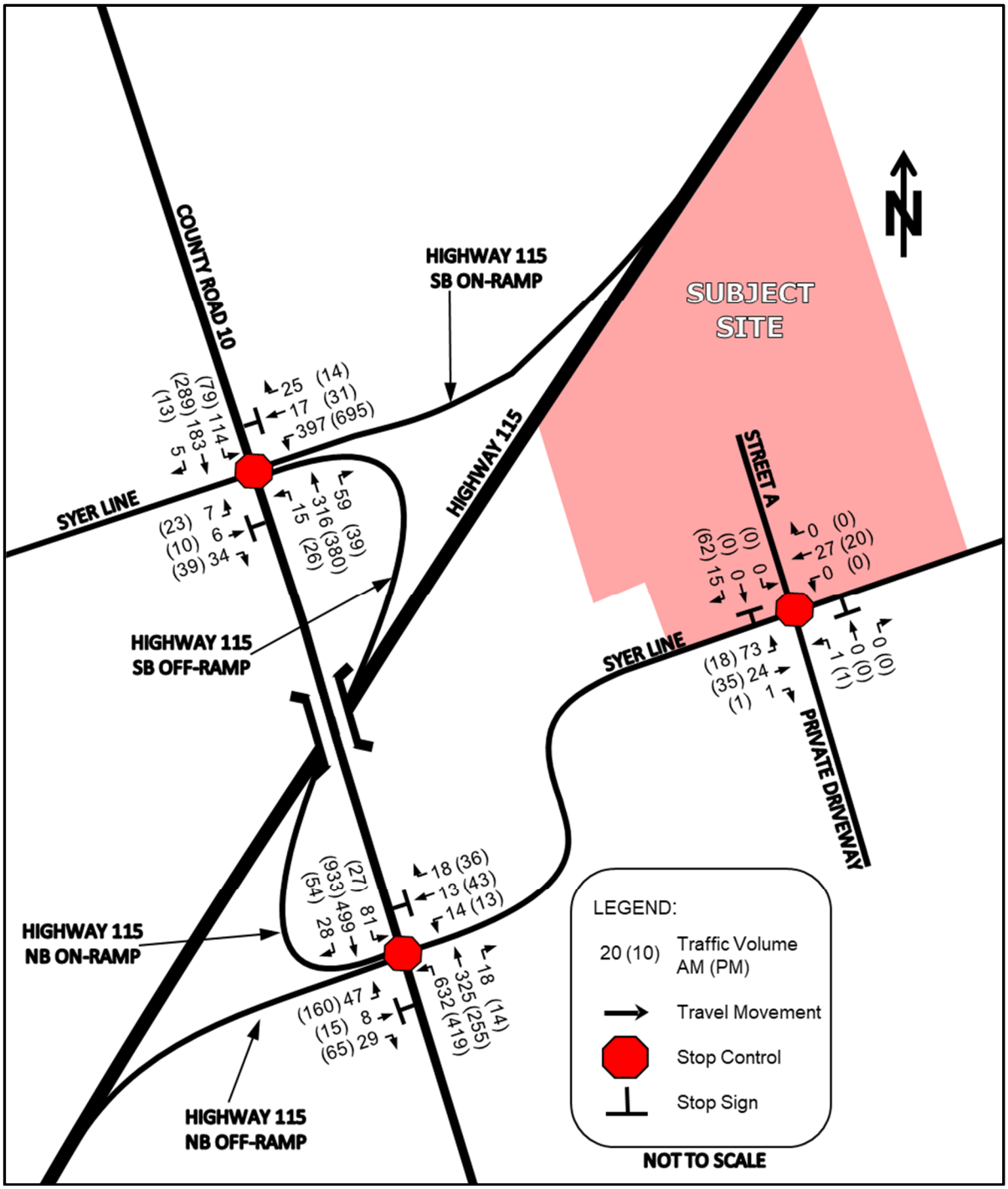


Figure 22 – Total (2037) Traffic Volumes



5 Intersection Operation with Proposed Development

5.1 Total (2027) Intersection Operation

The results of the LOS analysis under total (2027) traffic volumes during the AM and PM peak hour can be found below in **Table 14**. The recommended improvements identified in Section 3.3 have been utilized in this scenario. Detailed output of the Synchro analysis can be found in **Appendix F**.

Table 14 – Total (2027) LOS

Location (E-W Street / N-S Street)	Weekday AM Peak Hour					Weekday PM Peak Hour				
	V/C	Delay (s)	LOS	95th Percentile Queue		V/C	Delay (s)	LOS	95th Percentile Queue	
				Model	Storage				Model	Storage
Highway 115 SB Ramp & Syer Line / County Road 10 (signalized)	0.69	29.8	C	-	-	0.87	41.7	D	-	-
EB	0.04	12.2	B	7	-	0.07	8.2	A	8	-
WB	0.68	24.7	C	97	-	0.87	30.4	C	219	-
NB	0.72	37.6	D	105	-	0.89	64.6	E	151	-
SBL	0.51	34.9	C	38	82	0.47	47.7	D	30	82
SBTR	0.30	26.0	C	43	-	0.56	42.8	D	82	-
Highway 115 NB Ramp & Syer Line / County Road 10 (signalized)	0.95	30.4	C	-	-	0.91	35.6	D	-	-
EB	0.32	43.2	D	18	-	0.84	68.0	E	77	-
WB	0.16	41.3	D	12	-	0.22	39.5	D	27	-
NBL	0.99	45.3	D	105	85	0.90	32.0	C	81	85
NBTR	0.28	3.2	A	27	-	0.20	5.9	A	31	-
SB	0.76	26.5	C	137	-	0.92	37.2	D	306	-
Syer Line / Street A (unsignalized)	-	0.2	A	-	-	-	5.3	A	-	-
NB	0.00	8.8	A	0	-	0.00	9.8	A	0	-
SB	0.00	0.0	A	0	-	0.06	8.6	A	2	-

The results of the LOS analysis indicate that the Highway 115 SB Ramp & Syer Line / County Road 10 and Highway 115 NB Ramp & Syer Line / County Road 10 intersections are operating marginally outside the typical design limits as noted in Section 3.1. Since the delay is under LOS F and the anticipated queuing is not anticipated to cause any notable issues as noted below, no further improvements are recommended.

The anticipated queuing for northbound left turn movements is anticipated to extend past the existing storage length; however, the excess queue can be accommodated by the existing taper length.

There are no issues regarding the anticipated queue for all other movements in the study area.

An analysis was completed for left turn movements at the Syer Line / Street A intersection, based on the criteria outlined in Appendix 9A of the MTO DS (results are provided in **Appendix G**). Based on the above noted criteria additional auxiliary left-turn lane is not warranted at the Syer Line / Street A intersection.

A review of the need for an auxiliary right turn lane at the Syer Line / Street A intersection was completed as part of our analysis. The results of the Synchro analysis indicate that there is excess capacity for all movements; consequently, auxiliary right turn lanes are not recommended.

Based on the Ontario Traffic Manual Book 12 *Signal Justification*, traffic signals are not warranted at Syer Line / Street A intersection (results are provided in **Appendix H**).

No further infrastructure improvements are recommended for the total (2027) scenario within the study area.

5.2 Total (2032) Intersection Operation

The results of the LOS analysis under total (2032) traffic volumes during the AM and PM peak hour can be found below in **Table 15**. The recommended improvements identified in Section 3.3 and 3.4 have been utilized in this scenario. Detailed output of the Synchro analysis can be found in **Appendix F**.

Table 15 – Total (2032) LOS

Location (E-W Street / N-S Street)	Weekday AM Peak Hour					Weekday PM Peak Hour				
	V/C	Delay (s)	LOS	95th Percentile Queue		V/C	Delay (s)	LOS	95th Percentile Queue	
				Model	Storage				Model	Storage
Highway 115 SB Ramp & Syer Line / County Road 10 (signalized)	0.69	29.7	C	-	-	0.85	35.3	D	-	-
EB	0.04	15.4	B	8	-	0.11	31.3	C	18	-
WBL	0.72	30.8	C	114	190	0.85	27.3	C	160	190
WBTR	0.04	15.8	B	8	-	0.04	10.9	B	8	-
NB	0.65	33.6	C	107	-	0.81	49.9	D	148	-
SBL	0.43	30.0	C	37	82	0.40	38.0	D	30	82
SBTR	0.30	24.8	C	48	-	0.53	36.7	D	85	-
Highway 115 NB Ramp & Syer Line / County Road 10 (signalized)	0.84	27.1	C	-	-	0.85	35.0	C	-	-
EB	0.57	48.4	D	26	-	0.85	66.3	E	90	-
WB	0.22	41.4	D	16	-	0.20	38.2	D	27	-
NBL	0.85	22.7	C	160	85	0.83	35.5	D	105	85
NBTR	0.30	3.5	A	32	-	0.23	7.0	A	35	-
SB	0.83	40.8	D	95	-	0.79	34.6	C	174	-
Syer Line / Street A (unsignalized)	-	5.0	A	-	-	-	5.1	A	-	-
NB	0.00	10.2	B	0	-	0.00	9.8	A	0	-
SB	0.02	8.5	A	1	-	0.06	8.6	A	2	-

The results of the LOS analysis indicate that the Highway 115 SB Ramp & Syer Line / County Road 10 and Highway 115 NB Ramp & Syer Line / County Road 10 intersections are operating marginally outside the typical design limits as noted in Section 3.1. Since the delay is under LOS F and the anticipated queuing is not anticipated to cause any notable issues as noted below, no further improvements are recommended.

The anticipated queue for westbound left turn movements at the Highway 115 SB Ramp & Syer Line / County Road 10 intersection and northbound left turn movements at the Highway 115 NB Ramp & Syer Line / County Road 10 intersection extend past the existing / proposed storage length; however, the excess queue can be accommodated by the taper length and will clear by the end of each phase.

There are no issues regarding the anticipated queue for all other movements in the study area.

An analysis was completed for left turn movements at the Syer Line / Street A intersection, based on the criteria outlined in Appendix 9A of the MTO DS (results are provided in **Appendix G**). Based on the above noted criteria additional auxiliary left-turn lane is not warranted at the Syer Line / Street A intersection.

A review of the need for an auxiliary right turn lane at the Syer Line / Street A intersection was completed as part of our analysis. The results of the Synchro analysis indicate that there is excess capacity for all movements; consequently, auxiliary right turn lanes are not recommended.

Based on the Ontario Traffic Manual Book 12 *Signal Justification*, traffic signals are not warranted at Syer Line / Street A intersection (results are provided in **Appendix H**).

No further infrastructure improvements are recommended for the total (2032) scenario within the study area.

5.3 Total (2037) Intersection Operation

The results of the LOS analysis under total (2037) traffic volumes during the AM and PM peak hour can be found below in **Table 16**. The recommended improvements identified in Section 3.3 and 3.4 have been utilized in this scenario. Detailed output of the Synchro analysis can be found in **Appendix F**.

Table 16 – Total (2037) LOS

Location (E-W Street / N-S Street)	Weekday AM Peak Hour					Weekday PM Peak Hour				
	V/C	Delay (s)	LOS	95th Percentile Queue		V/C	Delay (s)	LOS	95th Percentile Queue	
				Model	Storage				Model	Storage
Highway 115 SB Ramp & Syer Line / County Road 10 (unsignalized)	0.74	31.9	C	-	-	0.91	40.6	D	-	-
EB	0.05	15.4	B	8	-	0.12	31.9	C	19	-
WBL	0.76	33.2	C	124	190	0.89	32.0	C	186	190
WBTR	0.05	15.9	B	9	-	0.05	10.9	B	9	-
NB	0.73	36.9	D	122	-	0.89	59.1	E	173	-
SBL	0.53	33.9	C	43	82	0.51	43.5	D	36	82
SBTR	0.33	25.3	C	53	-	0.60	38.8	D	98	-
Highway 115 NB Ramp & Syer Line / County Road 10 (unsignalized)	0.90	33.2	C	-	-	0.91	42.9	D	-	-
EB	0.63	52.3	D	30	-	0.92	78.8	E	107	-
WB	0.22	41.1	D	16	-	0.22	37.9	D	30	-
NBL	0.91	31.1	C	186	85	0.88	46.5	D	120	85
NBTR	0.33	3.9	A	39	-	0.25	7.8	A	38	-
SB	0.91	48.7	D	110	-	0.89	42.6	C	192	-
Syer Line / Street A (unsignalized)	-	4.9	A	-	-	-	5.0	A	-	-
NB	0.00	10.2	B	0	-	0.00	9.9	A	0	-
SB	0.02	8.5	A	1	-	0.06	8.6	A	2	-

The results of the LOS analysis indicate that the Highway 115 SB Ramp & Syer Line / County Road 10 and Highway 115 NB Ramp & Syer Line / County Road 10 intersections are operating marginally outside the typical design limits as noted in Section 3.1. Since the delay is under LOS F and the

anticipated queuing is not anticipated to cause any notable issues as noted below, no further improvements are recommended.

The anticipated queue for westbound left turn movements at the Highway 115 SB Ramp & Syer Line / County Road 10 intersection and northbound left turn movements at the Highway 115 NB Ramp & Syer Line / County Road 10 intersection extend past the existing / proposed storage length; however, the excess queue can be accommodated by the taper length and will clear by the end of each phase.

There are no issues regarding the anticipated queue for all other movements in the study area.

An analysis was completed for left turn movements at the Syer Line / Street A intersection, based on the criteria outlined in Appendix 9A of the MTO DS (results are provided in **Appendix G**). Based on the above noted criteria additional auxiliary left-turn lane is not warranted at the Syer Line / Street A intersection.

A review of the need for an auxiliary right turn lane at the Syer Line / Street A intersection was completed as part of our analysis. The results of the Synchro analysis indicate that there is excess capacity for all movements; consequently, auxiliary right turn lanes are not recommended.

Based on the Ontario Traffic Manual Book 12 *Signal Justification*, traffic signals are not warranted at Syer Line / Street A intersection (results are provided in **Appendix H**).

No further infrastructure improvements are recommended for the total (2037) scenario within the study area.

5.4 Site Access

Street A will operate efficiently as a full-movement access, with one-way stop control for southbound movements. No lane improvements are recommended on Syer Line at Street A. A single ingress and egress lane at Street A will provide the necessary capacity to service the proposed development.

The proposed spacing between Street A and County Road 10 (1.11 km) and Street A and Hutchinson Drive (2.67 km) is greater than the desired spacing between adjacent intersections on a local road (40 metres) identified in Section 9.4.2.1 of the TAC Guidelines.

5.5 Sight Distance Review

A review of the available sight distance for the Street A access was completed as part of this analysis.

The sight distance east and west of Street A (greater than 200 metres) is greater than the minimum stopping and intersection sight distance requirements as per the TAC Guidelines for a design speed of 60 km/h (85 and 110 metres respectively).

Consequently, there are no issues with the sight distance available for the proposed Street A access.

6 Summary

The **Township of Cavan Monaghan** retained **JD Engineering** to prepare this traffic impact study in support of a proposed rezoning of an undeveloped property (Subject Site), for use as light industrial / employment lands. The Subject Site is located on the north side of Syer Line midblock between County Road 10 and Hutchinson Drive in the Township of Cavan Monaghan, County of Peterborough. This chapter summarizes the conclusions and recommendations from the study.

1. The proposed development is expected to generate a total of 88 AM and 80 PM peak hour trips.
2. Detailed turning movement counts and pedestrian counts were obtained from the MTO at the following intersections Highway 115 SB Ramp & Syer Line / County Road 10 and Highway 115 NB Ramp & Syer Line / County Road 10, completed on Tuesday, October 30th, 2018. Detailed turning movement traffic and pedestrian counts were also completed at the Larmer Line / County Road 10 intersection, completed on Tuesday, April 25th, 2017.
3. An intersection operation analysis was completed at the study area intersections, using the existing (2022) and background (2027, 2032 and 2037) traffic volumes without the proposed development traffic. This enabled a review of existing and future traffic deficiencies that would be present without the influence of the proposed development. The following improvements are recommended:

   Background (2027) Traffic Volumes

   - Highway 115 SB Ramp & Syer Line / County Road 10
     - Installation of traffic signals.
   - Highway 115 NB Ramp & Syer Line / County Road 10
     - Installation of traffic signals.

   Background (2032) Traffic Volumes

   - Highway 115 SB Ramp & Syer Line / County Road 10
     - Widen the SB Off-Ramp for the construction of a westbound left turn lane with 150 metre storage length, 40 parallel length and 100 metre taper length and
     - Adjust signal to accommodate a protected + permissive westbound left turn phase.
   - Highway 115 NB Ramp & Syer Line / County Road 10
     - Widen the County Road 10, north of the Highway 115 NB Ramp to provide two southbound lanes. The southbound configuration at the intersection should include a through + left lane and a through + right lane.
4. An estimate of the amount of traffic that would be generated by the Subject Site was prepared and assigned to the study area streets and intersections.
5. An intersection operation analysis was completed under total (2027, 2032 and 2037) traffic volumes with the proposed development operational at the study area intersections. No additional improvements are recommended within the study area.
6. It is recommended the MTO and County monitor the queuing on County Road 10 and on the Highway 115 ramps as the future Millbrook developments become fully built-out and occupied,

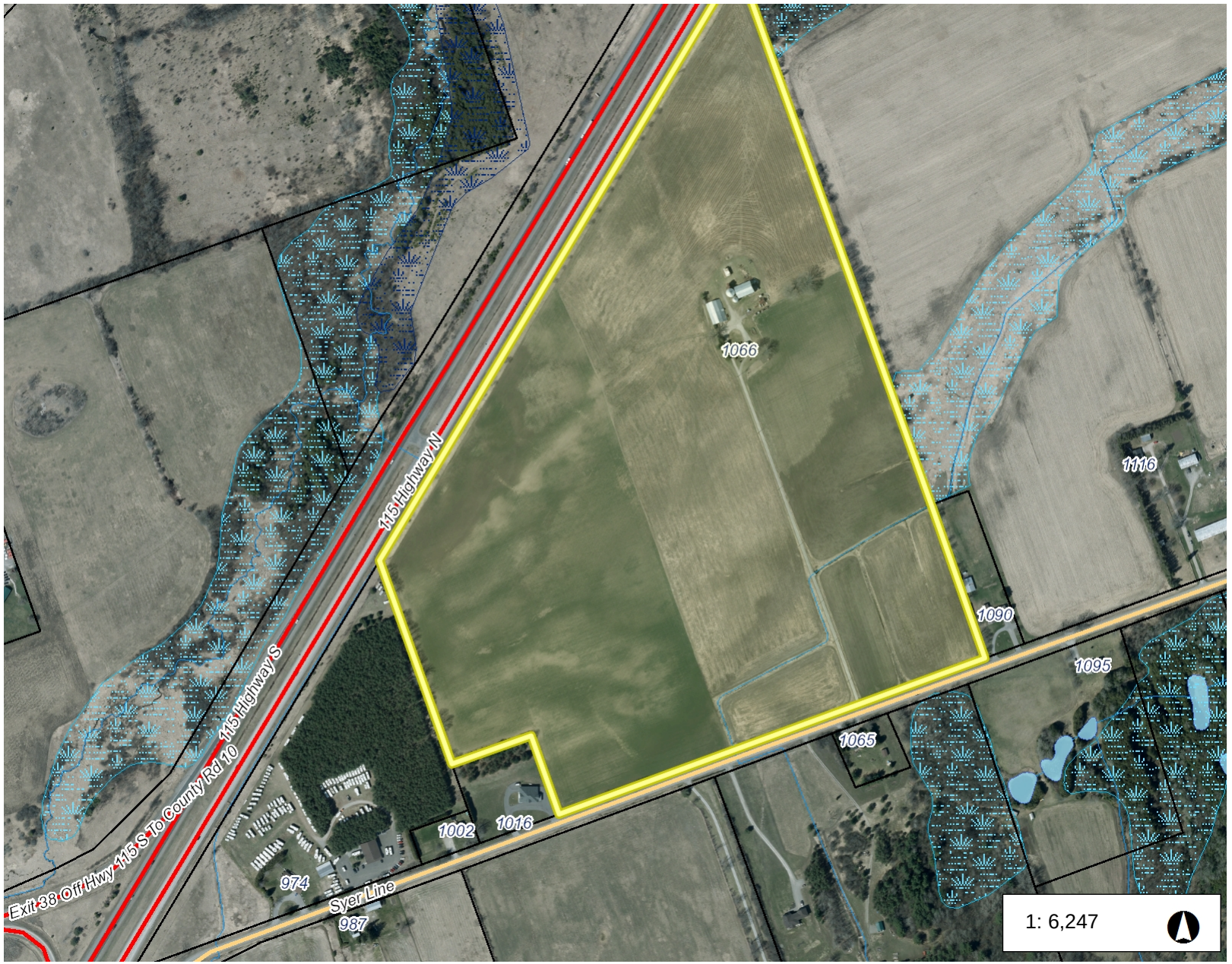
to determine if infrastructure improvements are warranted noted for the 2027 and 2032 horizon years.

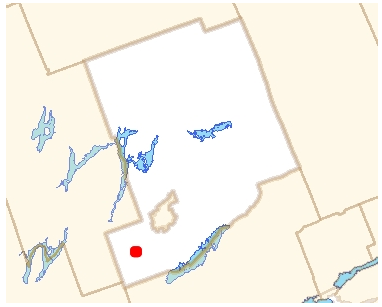
7. Street A will operate efficiently with full-movement access, with one-way stop control for southbound movements. A single ingress and egress lane at Street A will provide the necessary capacity to service the proposed development.
8. The available sight distance at Street A is sufficient for the intended use.
9. In summary, the proposed development will not cause any operational issues and will not add significant delay or congestion to the local roadway network.

Appendix A –
Subject Site – Property Boundary

County of Peterborough

1066 Syer Line - Aerial





Legend

Roads < 50,000
- PRIV ; Private; PRIV
- City Arterial
- City Collector and Local
- City Owned Unclassified
- Provincial
- County
- Township
- Water Access Only

Outside Roads < 50,000
- Major Roads
- Local Roads

- Peterborough Proposed Bypas
- First Nations
- Civic Address
- Parcel Fabric
- Parcel First Nations - Canada
- Rivers
  - Intermittent
  - Permanent
- Clean Water Act Policies Appl
- Provincially Significant Wetlan
- Locally Significant Wetlands
- Non-evaluated Wetlands
- Lakes - Local Scale
- Municipal Boundary - Upper Ti
  - <all other values>
  - COUNTY OF PETERBOROUGH

Notes

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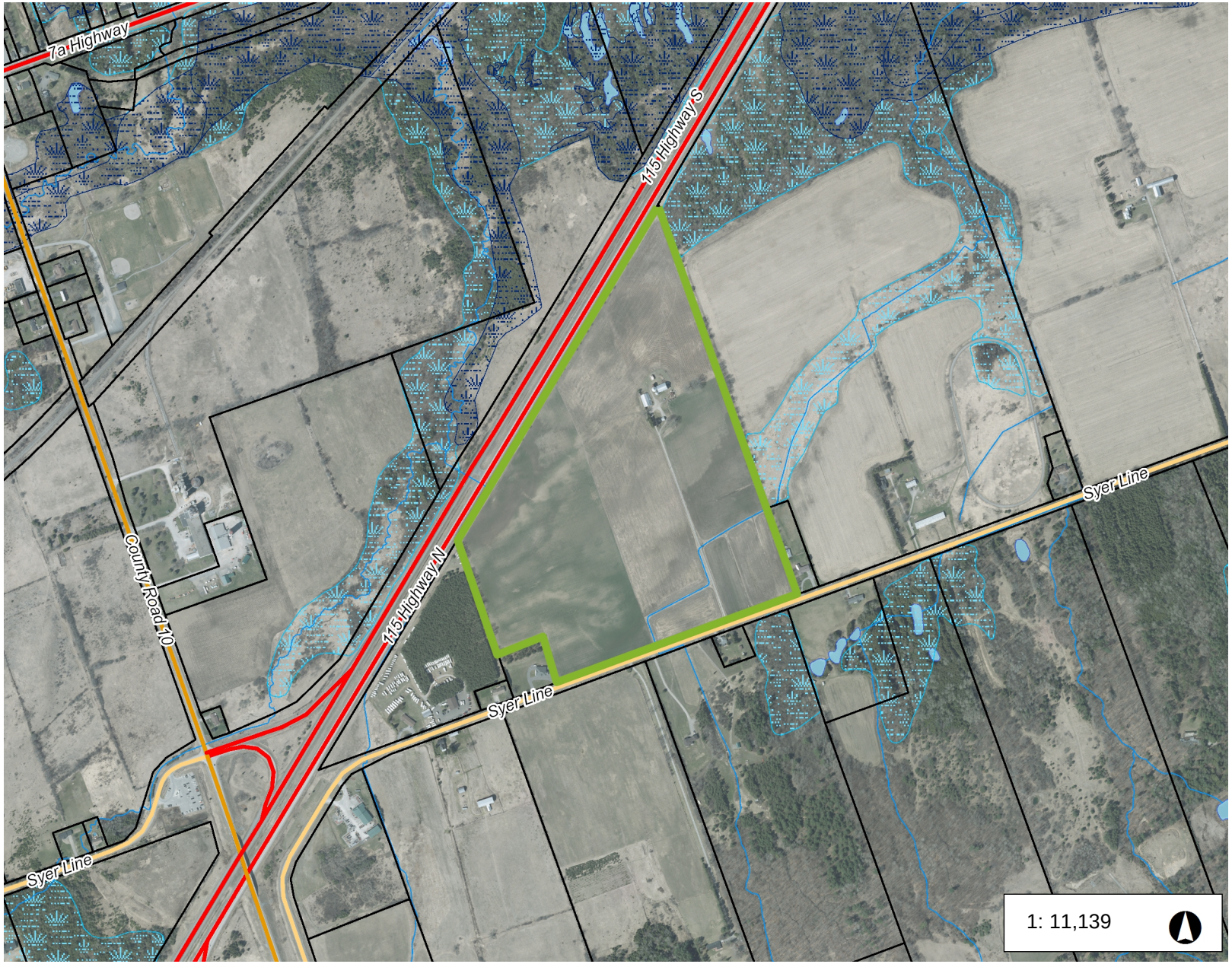
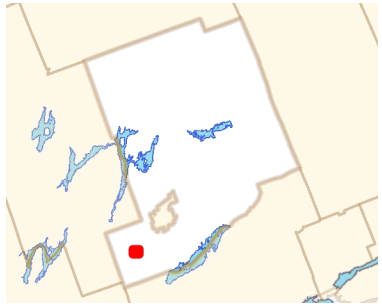
North_American_1983_CSRS_UTM_Zone_17N

County of Peterborough

1066 Syer Line - Map 2





Legend

Roads < 50,000
- PRIV ; Private; PRIV
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- Water Access Only

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- Major Roads
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- Peterborough Proposed Bypas
- First Nations
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- Parcel First Nations - Canada

Rivers
- Intermittent
- Permanent

- Clean Water Act Policies Appl
- Provincially Significant Wetlan
- Non-evaluated Wetlands
- Lakes - Local Scale

Municipal Boundary - Upper Ti
- <all other values>
- COUNTY OF PETERBOROUGH

Notes

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North_American_1983_CSRS_UTM_Zone_17N

Appendix B –
Adjacent Development Reports

Bromont TIS

Traffic Impact Study

Residential Development

(West of CR10)

Fallis Line, Millbrook, ON

Township of Cavan Monaghan,

County of Peterborough

ASURZA ENGINEERS

January 31, 2022

Project № 2124-19

AM Peak Hour - Existing Volumes 2021

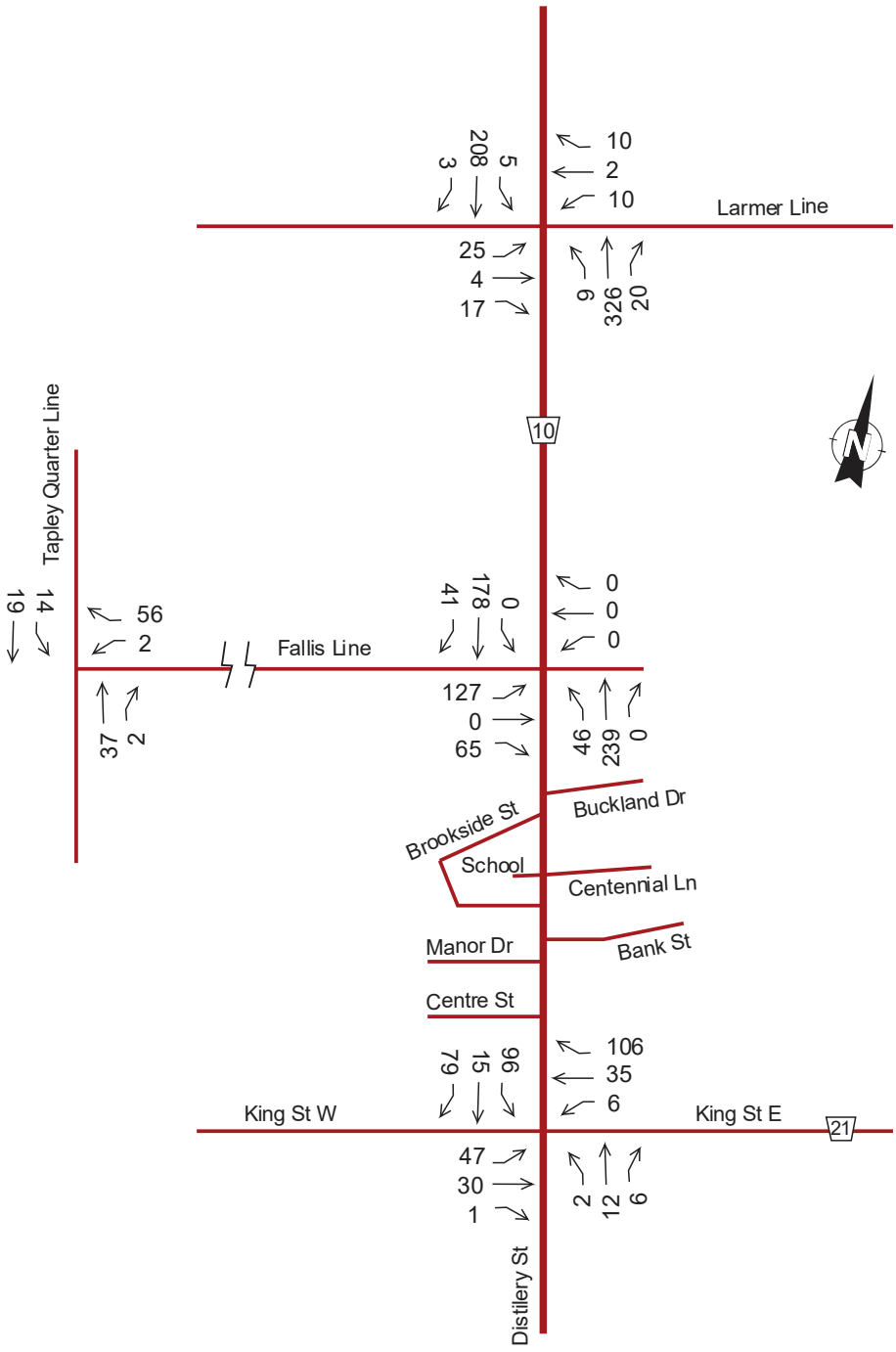

Exhibit 4: *Existing AM Peak Hour Traffic Volumes (2021).*

PM Peak Hour - Existing Volumes 2021

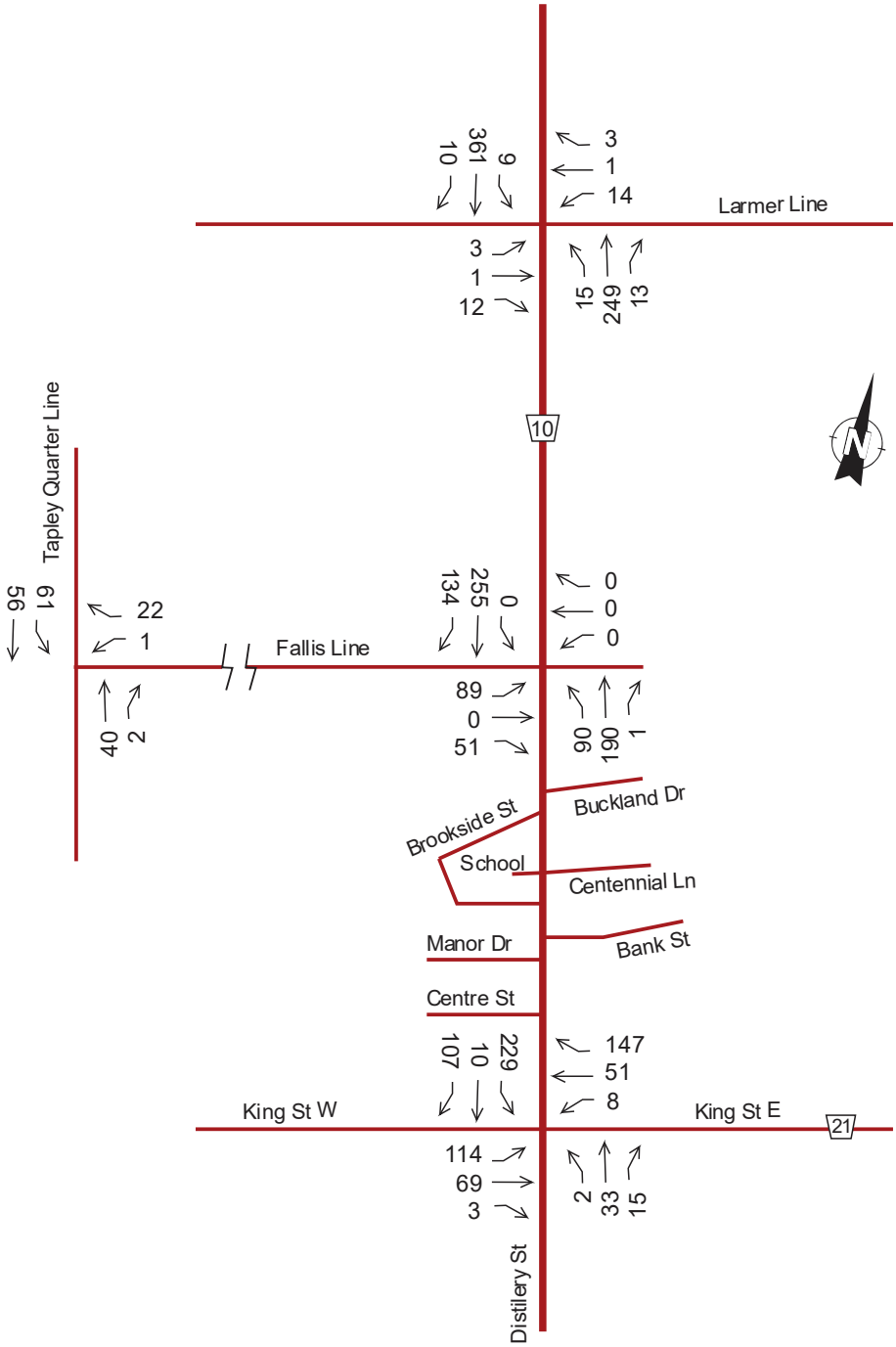

Exhibit 5: *Existing PM Peak Hour Traffic Volumes (2021).*

3 Background Traffic Volumes

3.1 Background Traffic Volumes

In order to establish base conditions for comparison and evaluation of future scenarios, it is necessary to review results of traffic operations over time. The estimated normal growth traffic volumes are based under the premise that existing geometric conditions is maintained and that traffic growth is expected over the next years.

As part of the background volumes; the study includes those major proposed developments that are approved or in construction; the background volumes also include the proposed development "Commercial and Residential" east of CR10 on Fallis Line; the sketch of these developments is shown in Exhibit 7. The traffic volumes of these developments were obtained from the "Millbrook Development Phase 2 – Traffic Impact Study for the Tower Hill Developments Ltd." Prepared by JD Engineering; these trips are included in the appendix.

Annual growth rate was estimated at 2.0% per year; this rate was used to project existing traffic volumes over the next years.

For estimation of the horizons years traffic volumes, the growth rate was applied to the existing volumes. The growth rate is yearly compounded.

The following Exhibits 8, 9 and 10 show the projected traffic volumes for the morning, afternoon and Saturday peak hours for the horizon years 2025 and 2030, respectively.

Sketch of Developments Within the Area

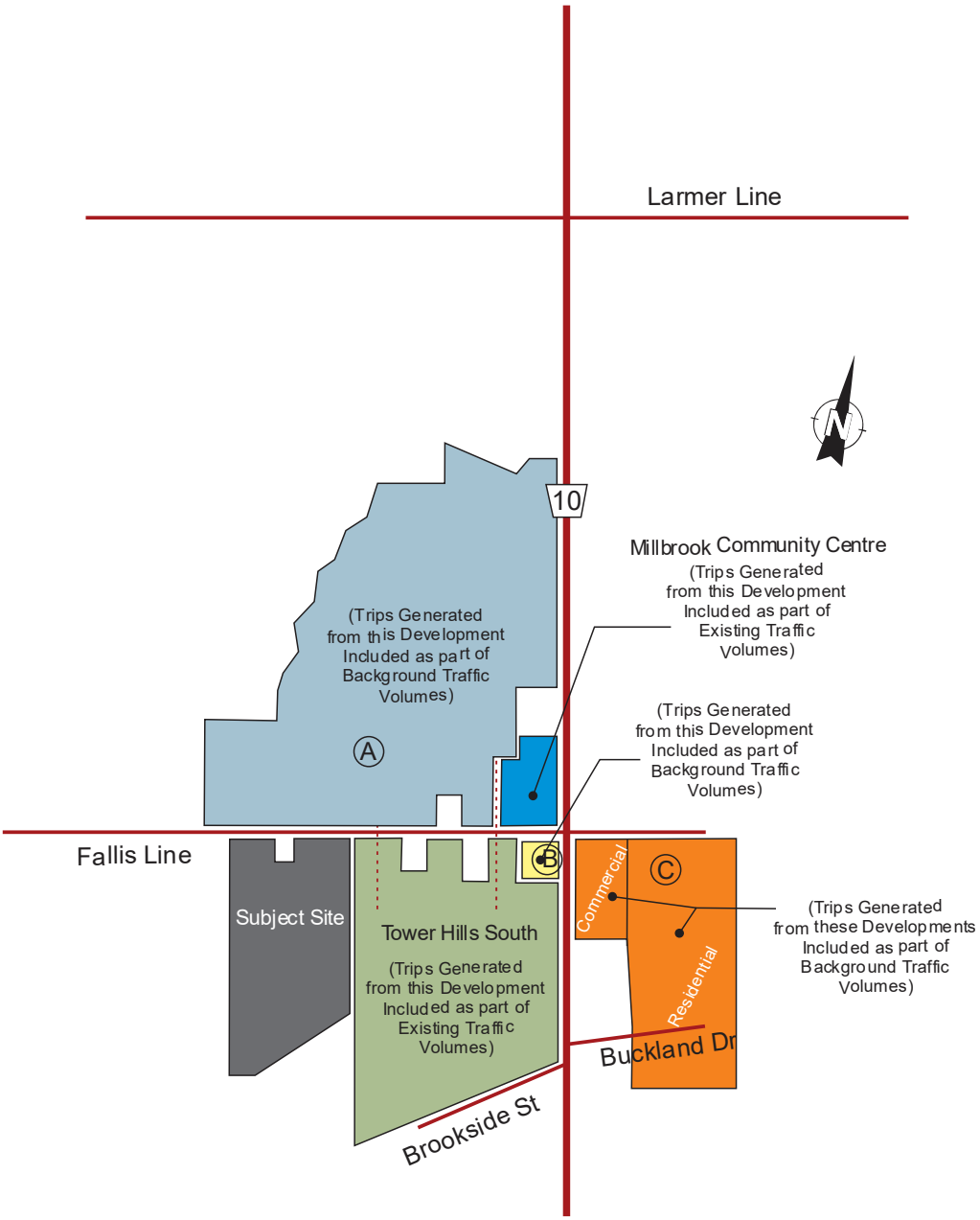

Exhibit 7: *Sketch of Developments Within the Area.*

AM Site Generated Trips With Diverted Trips - 2025 (Residential Site West of CR10)

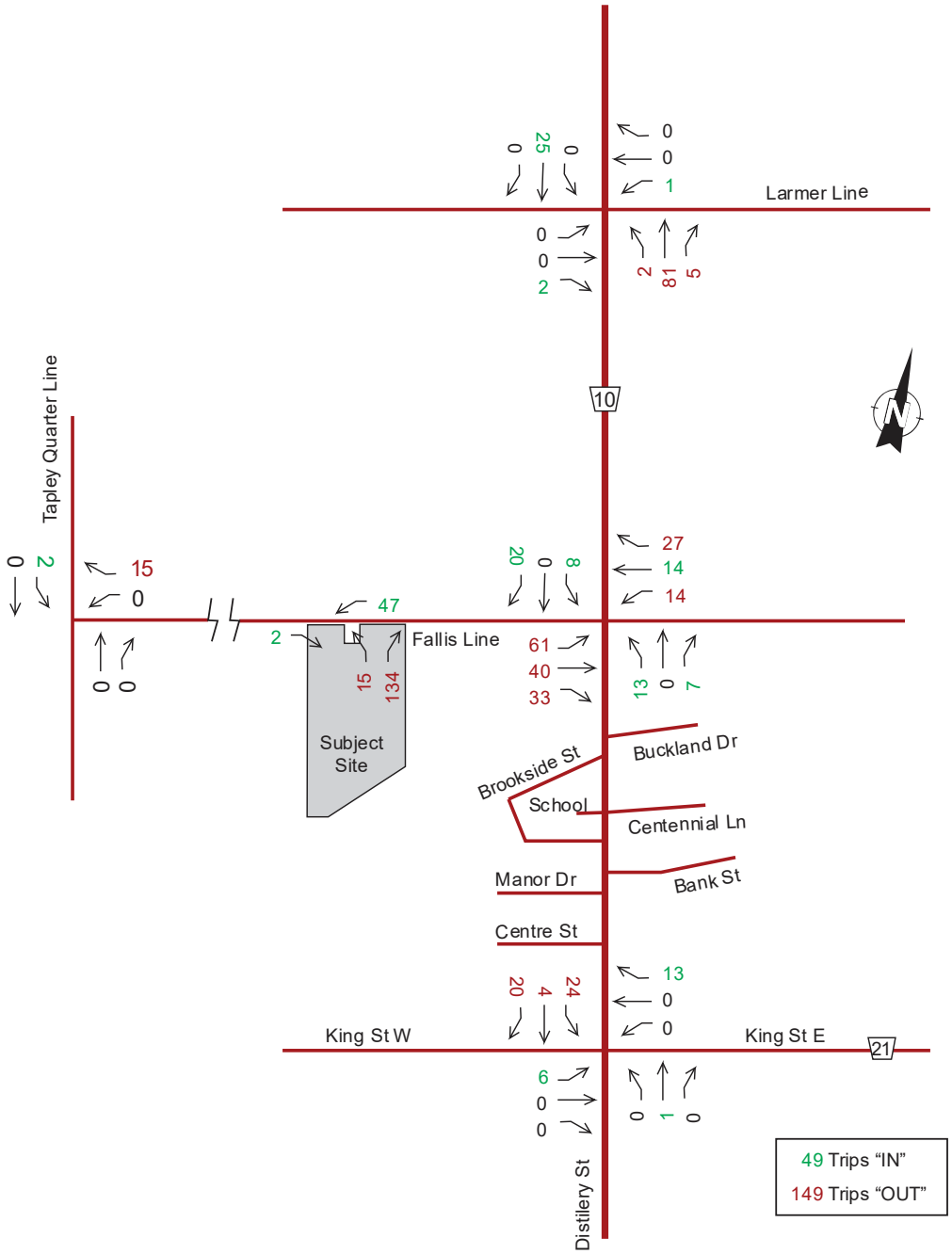

Exhibit 14: *AM Peak Hour Development Trips - 2025.*

PM Site Generated Trips With Diverted Trips - 2025 (Residential Site West of CR10)

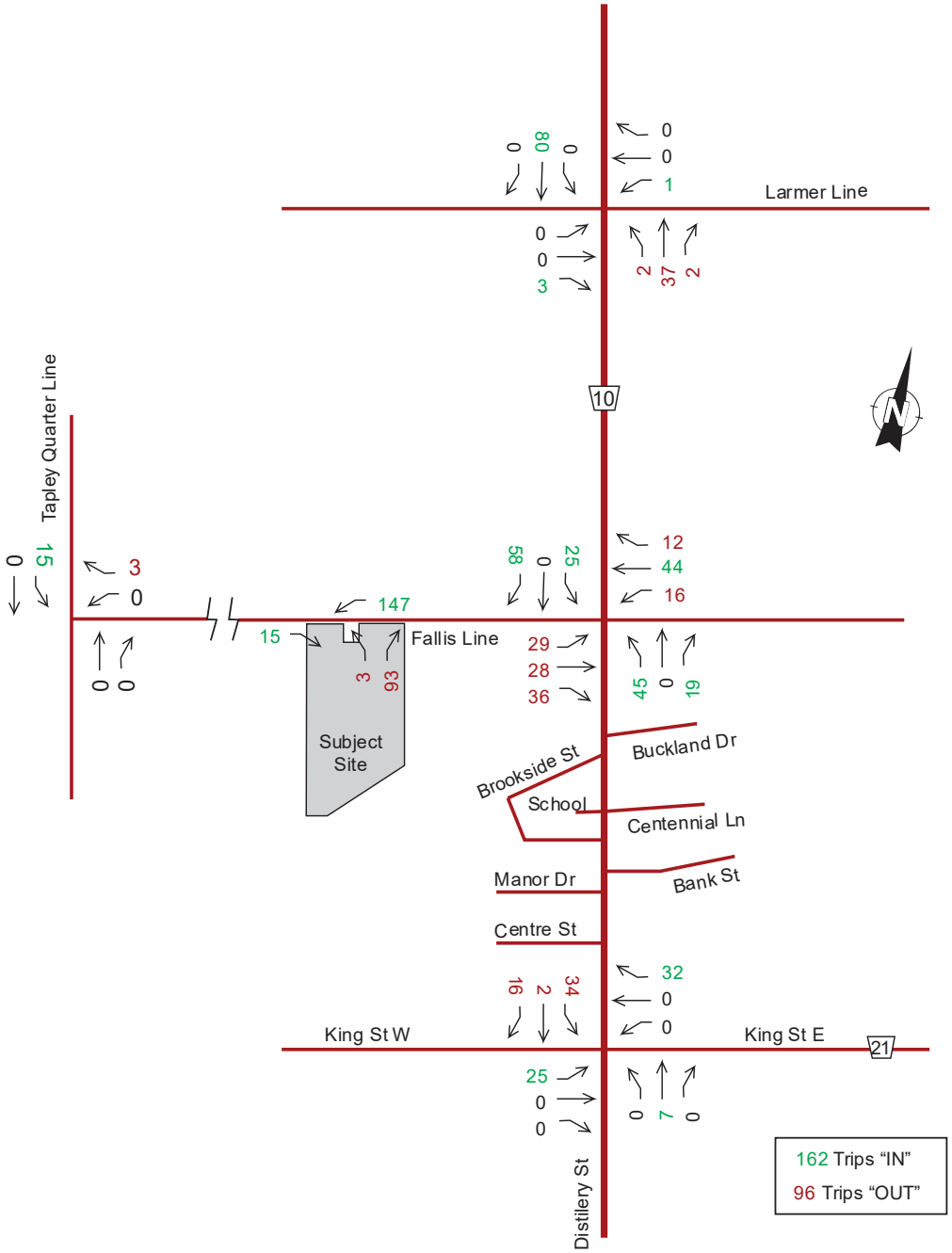

Exhibit 15: *PM Peak Hour Development Trips - 2025.*

AM Site Generated Trips With Diverted Trips - 2030 (Residential Site West of CR10)

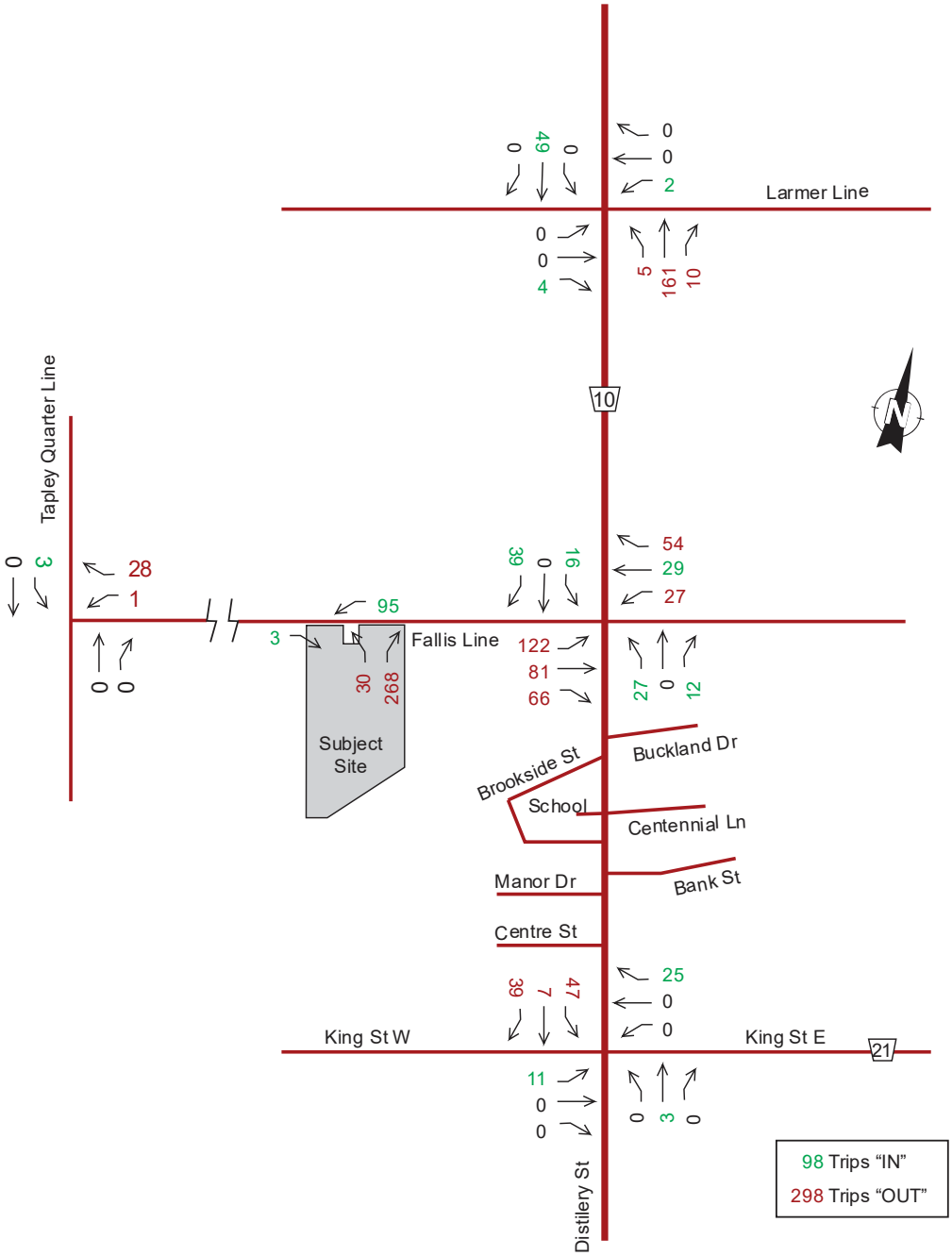

Exhibit 17: *AM Peak Hour Development Trips - 2030.*

PM Site Generated Trips With Diverted Trips - 2030 (Residential Site West of CR10)

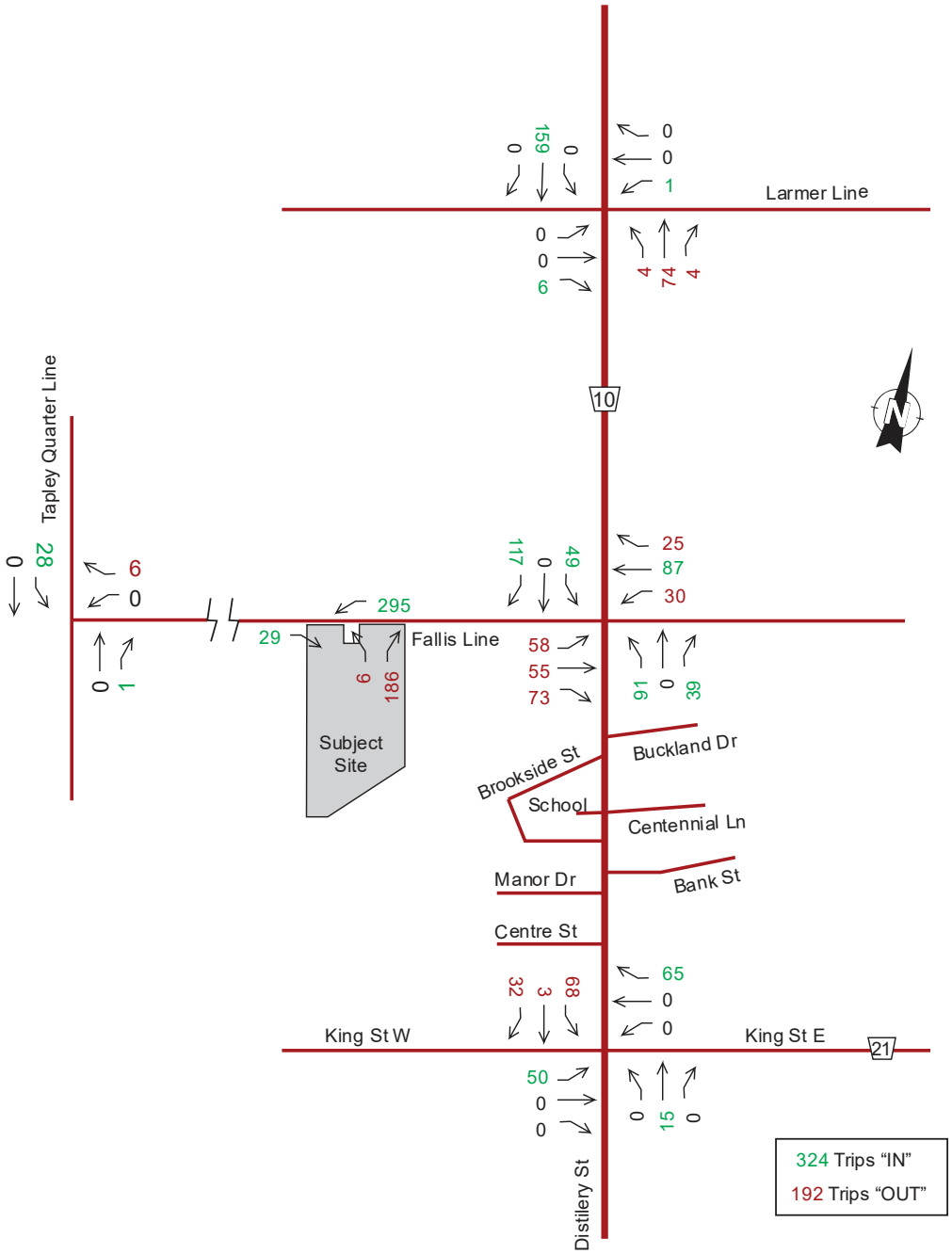

Exhibit 18: *PM Peak Hour Development Trips - 2030.*

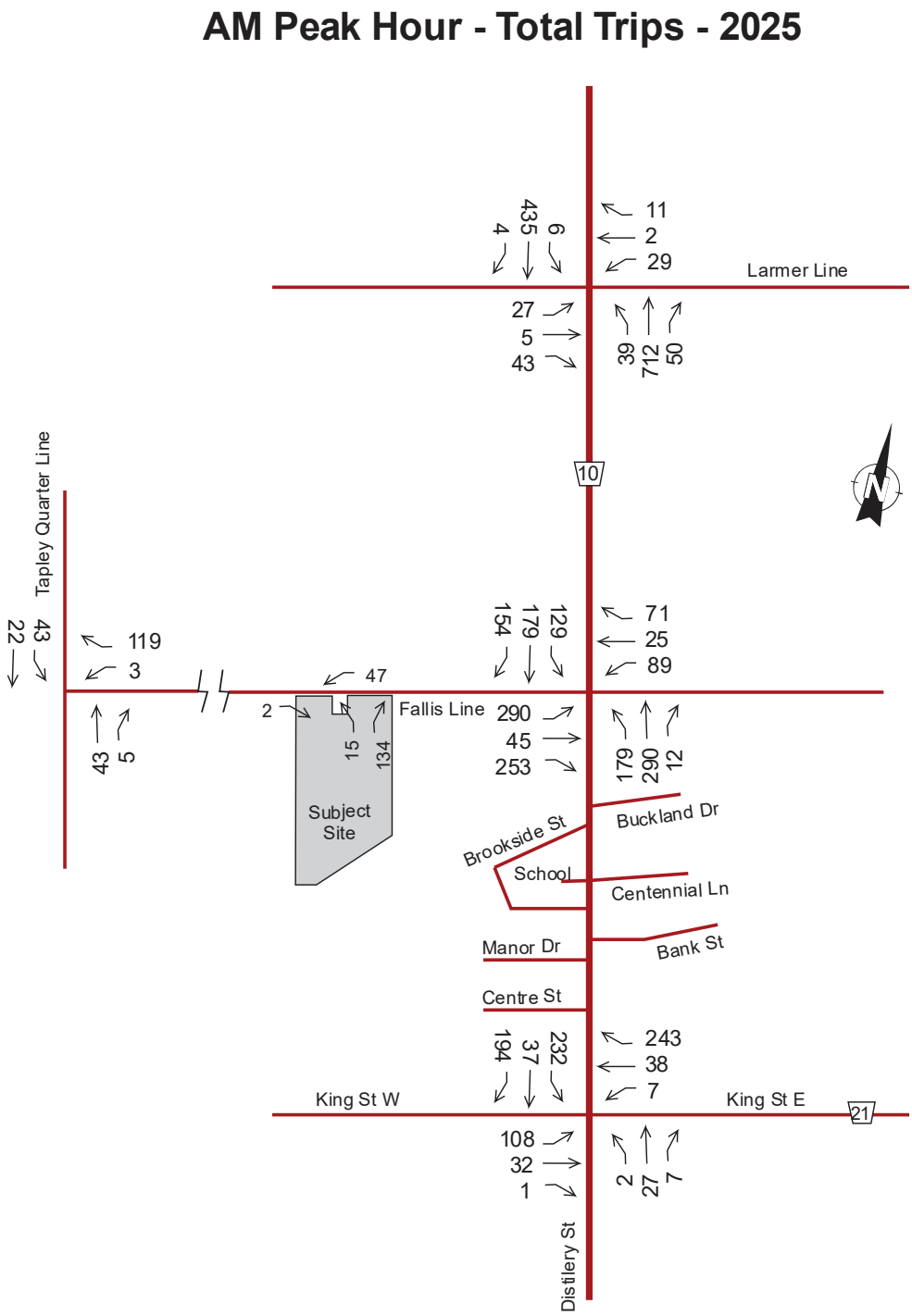

Exhibit 20: *AM Peak Hour Total Trips - 2025.*

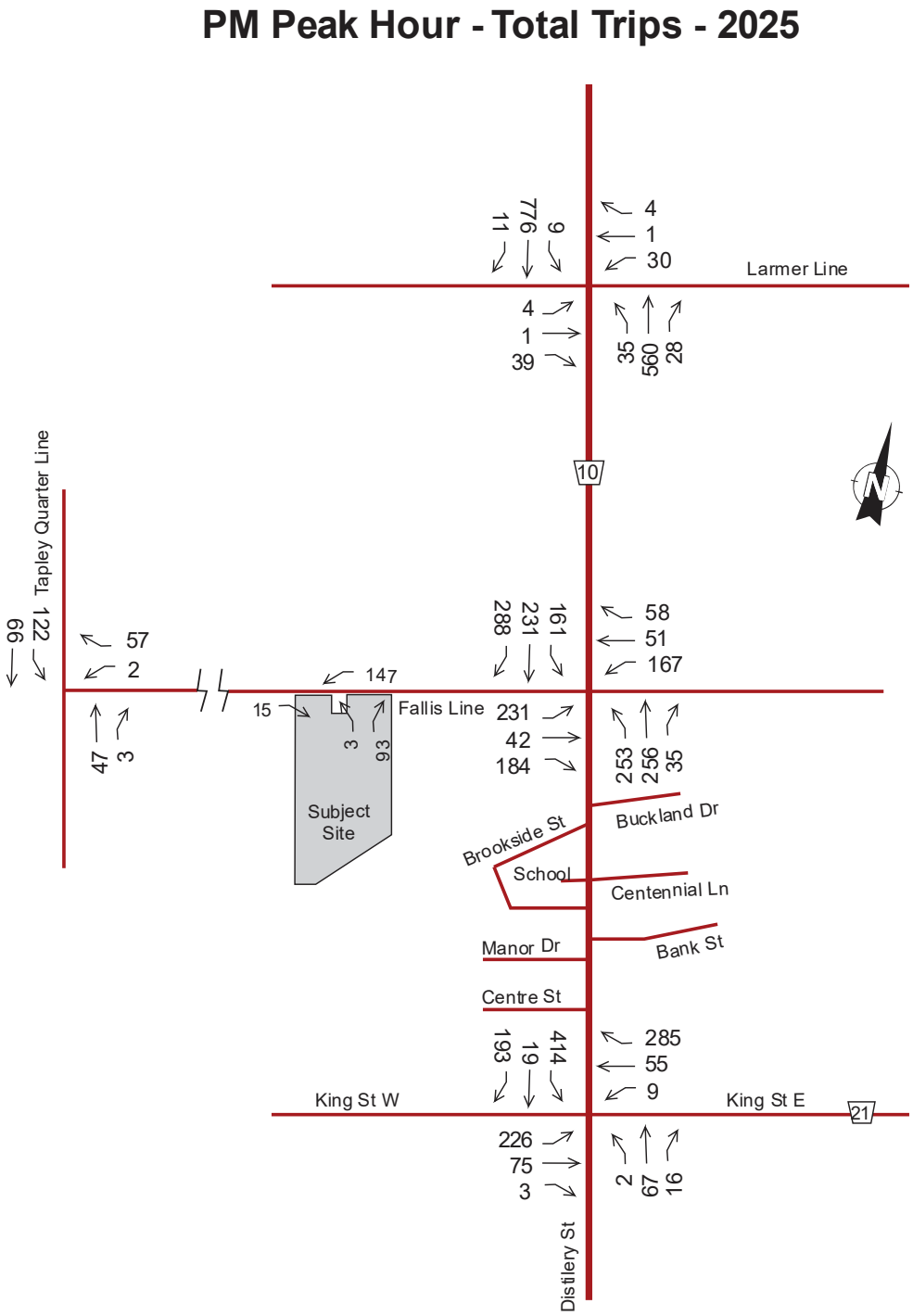

Exhibit 21: *PM Peak Hour Total Trips - 2025.*

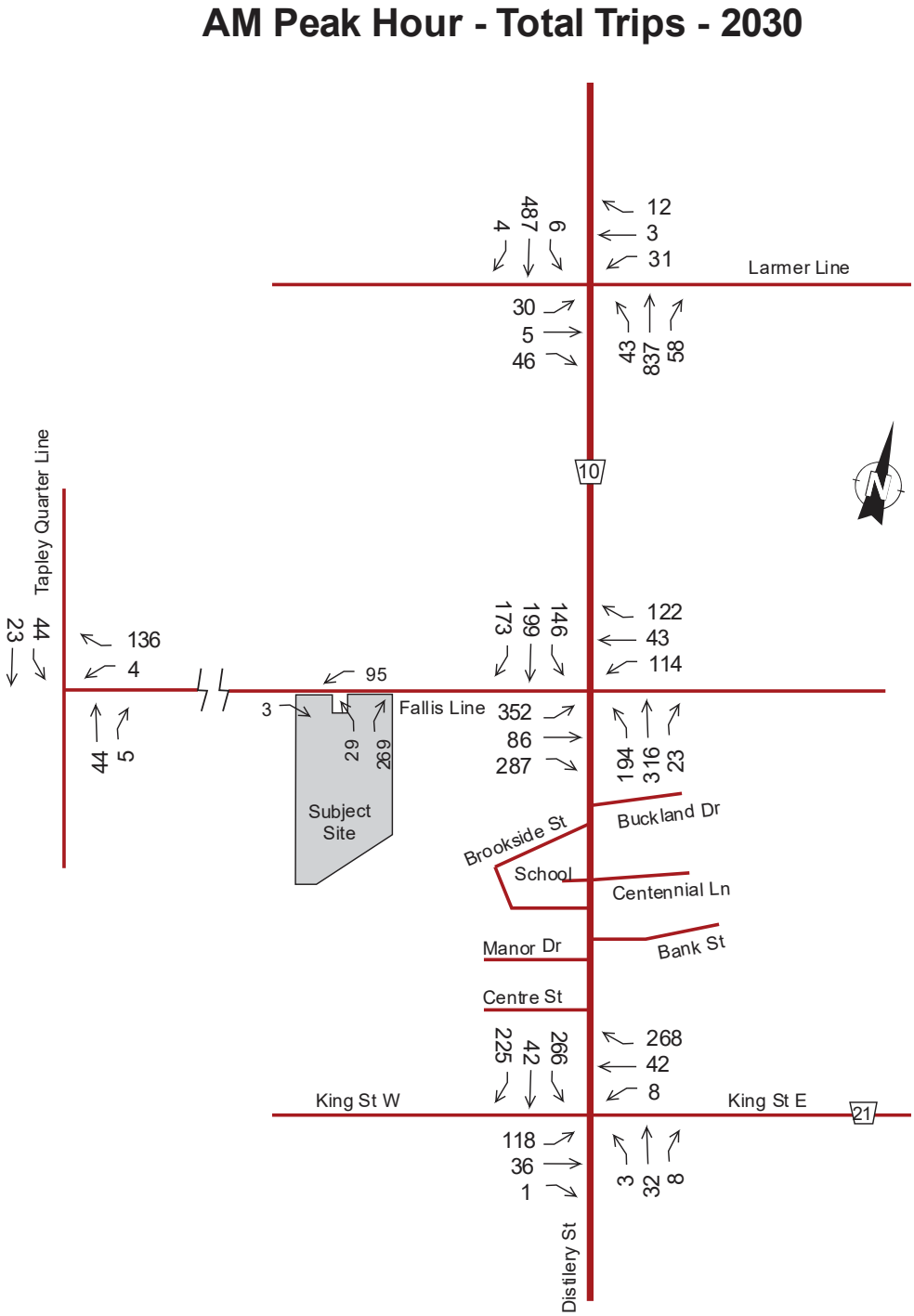

Exhibit 23: *AM Peak Hour Total Trips - 2030.*

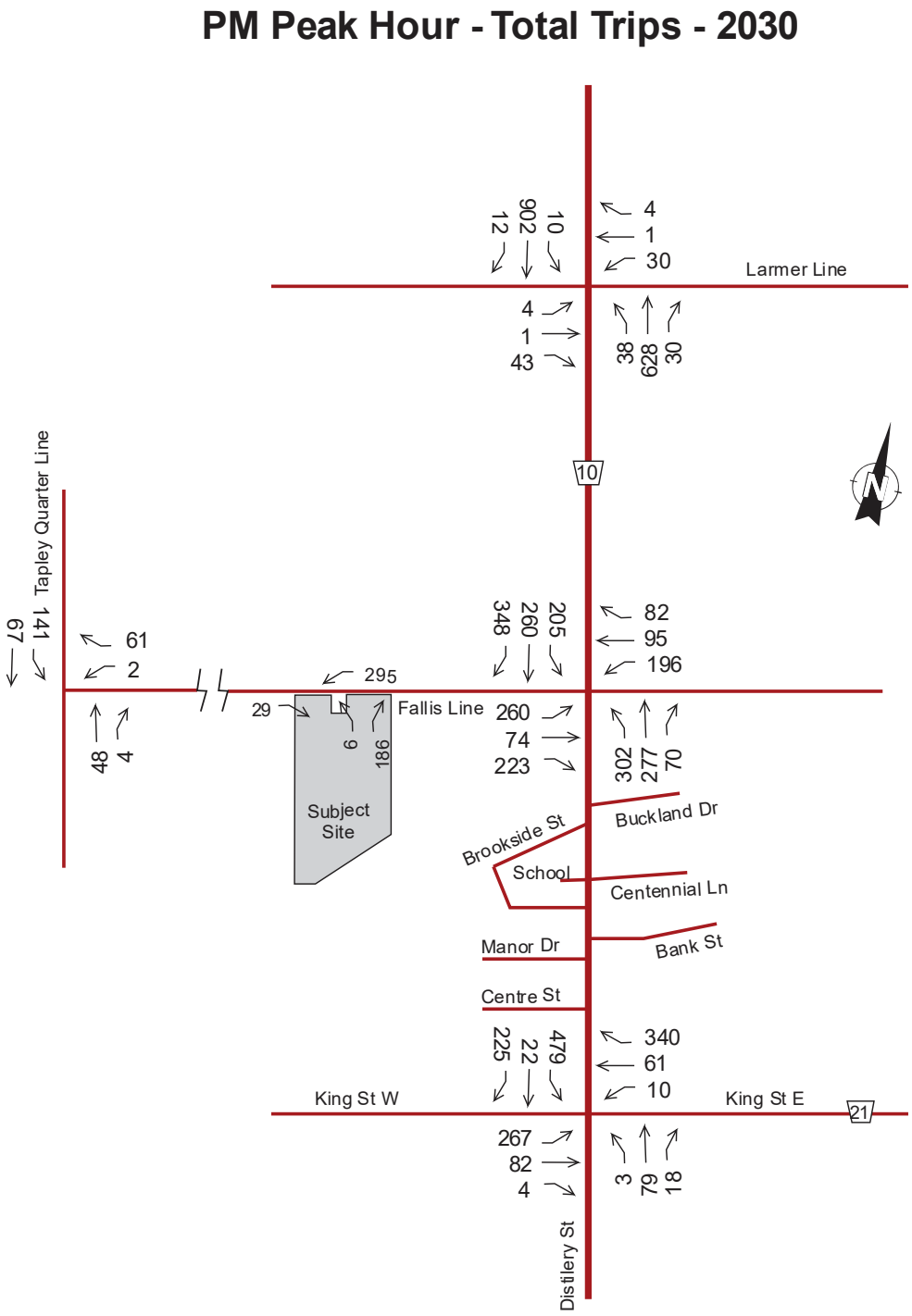

Exhibit 24: *PM Peak Hour Total Trips - 2030.*

Millbrook Fire Hall TIS

Millbrook Fire Hall

Township of Cavan Monaghan, County of Peterborough

Traffic Impact Study for the Township of Cavan Monaghan

Type of Document:
Draft Report

Project Number:
JDE – 21138

Date Submitted:
October 29th, 2021

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ENGINEERING

JD Northcote Engineering Inc.
86 Cumberland Street
Barrie, ON
705.725.4035
www.JDEngineering.ca

Table 4 – Background (2026) LOS

Location (N-S Street / E-W Street)	Weekday AM Peak Hour			Weekday PM Peak Hour		
	V/C	Delay (s)	LOS	V/C	Delay (s)	LOS
County Road 10 / Street B (unsignalized)	-	12.8	A	-	7.0	A
EB	0.92	85.1	F	0.82	82.9	F
County Road 10 / Municipal Office & Community Centre Driveway (unsignalized)	-	0.3	A	-	0.3	A
EB	0.03	12.5	B	0.06	21.0	C

The results of the LOS analysis indicate that the eastbound movements at the County Road 10 / Street B intersection are operating outside the typical design limits; however, no improvements are recommended as it is anticipated that eastbound traffic volumes at this intersection will redistribute as the eastbound control delay increases, to the signalized County Road 10 / Fallis Line intersection via the internal road network and various intersections constructed on Fallis Line in Phase 2 of the Millbrook Development.

The results of the LOS analysis indicate that all other intersections in the study area are operating within the typical design limits noted in Section 3.1.

For right turn movements at the unsignalized intersections in the study area, the criteria outlined in Appendix G of the VDOT RDM were applied. Based on the above noted criteria, a right turn lane is not warranted at any of the unsignalized intersections in the study area (results provided in **Appendix I**).

Based on the Ontario Traffic Manual Book 12 *Signal Justification*, traffic signals are not warranted at any of the unsignalized intersections in the study area (results are provided in **Appendix H**).

The anticipated 95th percentile queue can be accommodated for all proposed storage lanes in the study area.

No additional improvements are recommended within the study area for the background (2026) scenario.

4 Proposed Development Traffic Generation and Assignment

4.1 Traffic Generation

The proposed development will be occupied by two user groups; the Township's Fire and Emergency Service and the County's Paramedic Service. Each service will generate varying levels of traffic based on the following factors: staffing / shift changes, number of emergency calls, number of visitors, number of deliveries. The AM and PM traffic generation for each service has been confirmed through discussions with Township and County staff.

The proposed development's breakdown of use by each service is summarized in **Table 5**.

Table 5 – Proposed Development Operational Data

Service	Number of Employees	Number of Emergency Calls	Number of Visitors	Number of Deliveries
County Paramedic Service	2 staff from 8:00 – 20:00 2 staff from 20:00 – 8:00	2 in a 24 hour period	None	1 per week
Township Fire Service	3 staff from 8:30 – 16:30*	2 in a 24 hour period	1-2 per week	2 per week

* Calls are responded to from home, outside staff hours

Based on our review of the information provided by the two user groups, the estimated trip generation during the AM and PM peak hour for each user group of the subject site is illustrated below in **Tables 6** and **7.** The total estimated trip generation for the proposed development is illustrated below in **Table 8**.

Table 6 – Estimated Traffic Generation for the County's Paramedic Services

	AM Peak Hour			PM Peak Hour		
	IN	OUT	TOTAL	IN	OUT	TOTAL
Employees*	2	2	4	-	-	-
Emergency Calls**	1	1	2	1	1	2
Visitors	-	-	-	-	-	-
Deliveries***	1	1	2	1	1	2
TOTAL TRIPS	**4**	**4**	**8**	**2**	**2**	**4**

*The morning shift change occurs in the AM peak hour and the evening shift change occurs outside the peak hours
** It is assumed one emergency call will occur during each peak hour
*** It is assumed one delivery will occur during each peak hour

Table 7 – Estimated Traffic Generation for the Township's Fire Services

	AM Peak Hour			PM Peak Hour		
	IN	OUT	TOTAL	IN	OUT	TOTAL
Employees*	3	0	3	0	3	3
Emergency Calls**	1	1	2	1	1	2
Visitors***	1	1	2	1	1	2
Deliveries****	1	1	2	1	1	2
TOTAL TRIPS	**6**	**3**	**9**	**3**	**6**	**9**

*It is assumed all staff will arrive in the AM peak hour and exit in the PM peak hour
** It is assumed one emergency call will occur during each peak hour
*** It is assumed one visitor will visit during each peak hour
**** It is assumed one delivery will occur during each peak hour

Table 8 – Estimated Traffic Generation Summary for Proposed Development

Service	AM Peak Hour			PM Peak Hour		
	IN	OUT	TOTAL	IN	OUT	TOTAL
County's Paramedic Services	4	4	8	2	2	4
Township's Fire and Emergency Services	6	3	9	3	6	9
TOTAL TRIPS	**10**	**7**	**17**	**5**	**8**	**13**

No transportation modal split reduction has been applied to the above-noted traffic generation calculation.

4.2 Traffic Assignment

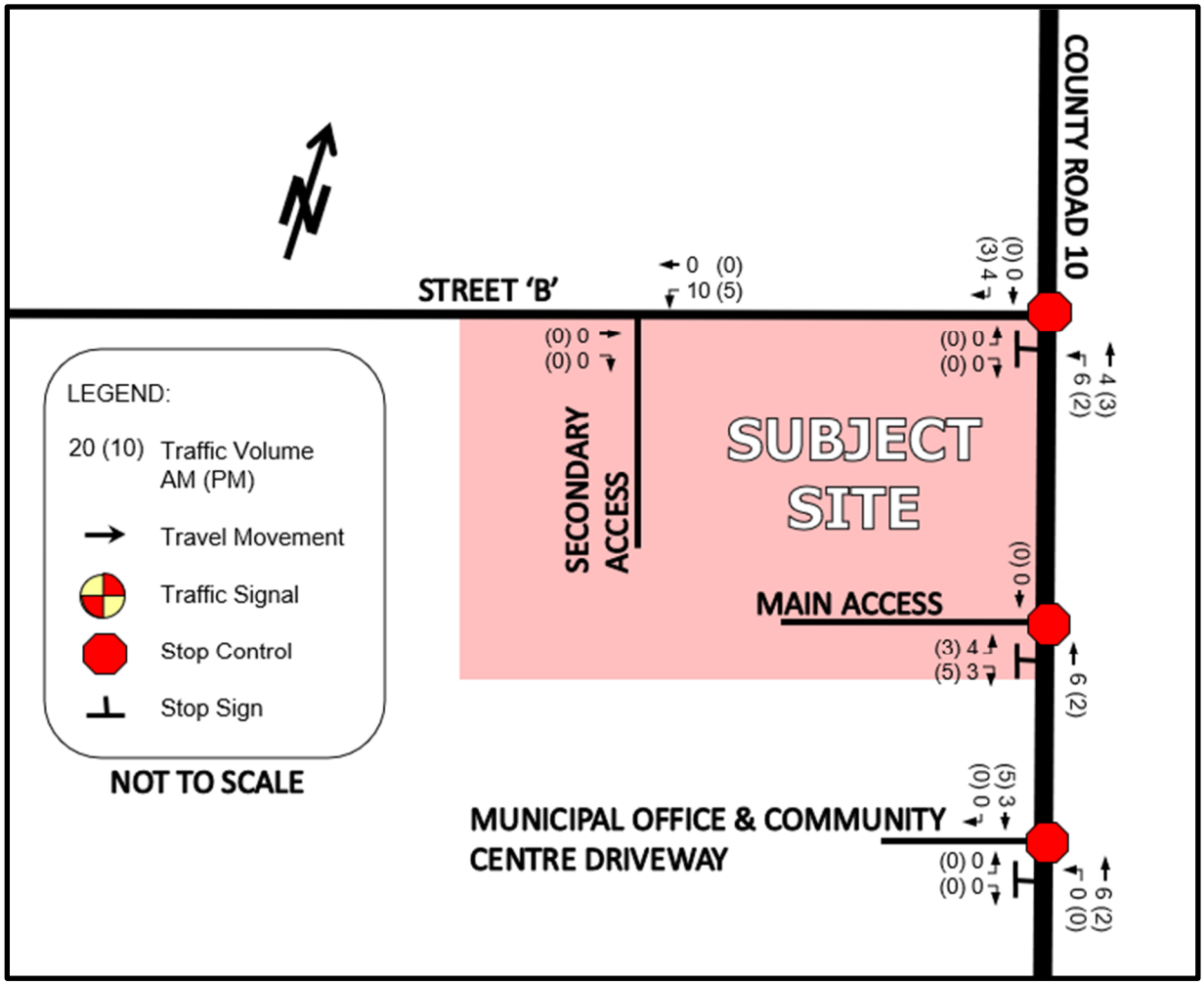
The distribution of traffic for the proposed development is based on the distribution of the existing traffic volumes within the study area. **Table 9** illustrates the calculation of the distribution of ingress and egress traffic for the proposed development.

Table 9 – Proposed Development Traffic Distribution

Travel Direction (to / from)	AM Peak Hour		PM Peak Hour	
	Ingress	Egress	Ingress	Egress
North via County Road 10	43%	57%	57%	43%
South via County Road 10	57%	43%	43%	57%
TOTAL	**100%**	**100%**	**100%**	**100%**

Using the traffic distributions pattern noted above, the traffic assignment for the proposed development was calculated for the AM and PM peak hour and is illustrated in **Figure 12**.

Figure 12 – Proposed Development Traffic Assignment



Appendix C –
Traffic Count Data

Ontario

Ministry of Transportation

TVIS II - Traffic Volume Information System

Turning Movement Total Count and Peak Summary Report

Description: Hwy 115 @ Peterborough City Rd 10 (SRT)

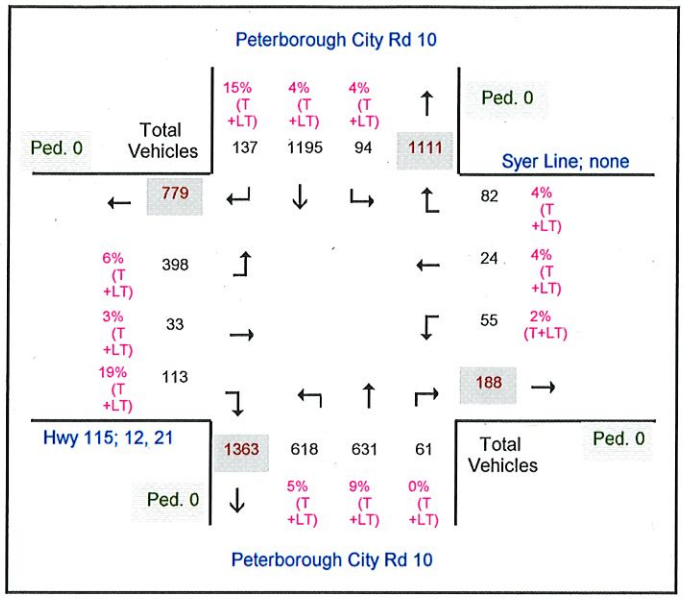
Region: EASTERN | **Survey Type:** TM – Interchange | **Hwy:** 115

Start Date: 30-Oct-2018 (Tue) | **I/C Side:** S | **LHRS:** 42245

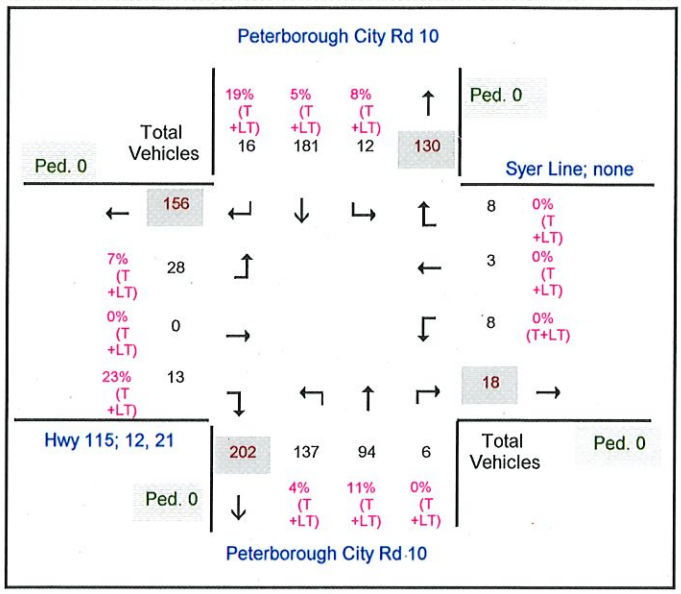
End Date: 30-Oct-2018 (Tue) | **Int. Type:** Four Leg | **Offset:** 0

Schedule Summary: TUES-THURS, 07:00-09:00, 11:00-14:00, 15:00-18:00

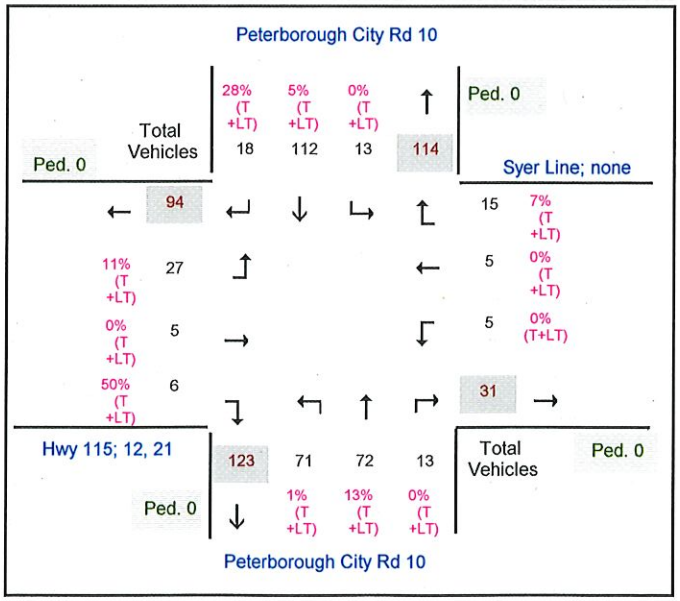
Total Count — Number of hours: 8



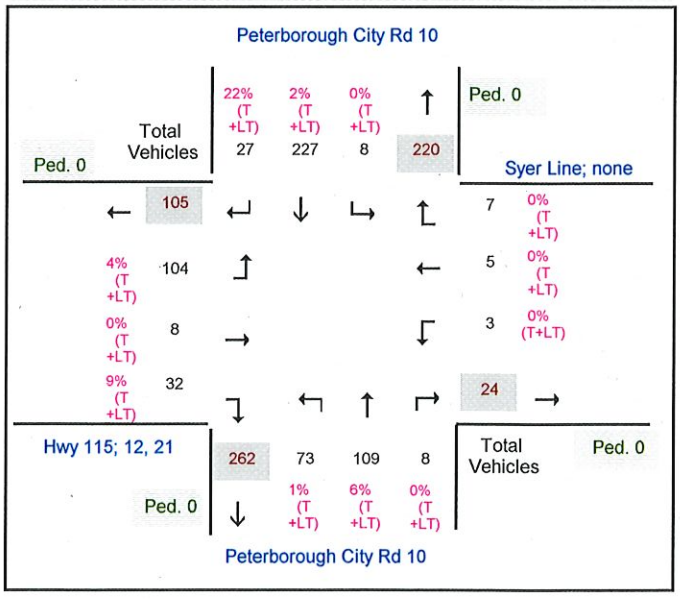
AM Peak Hour Report — Start Time: 07:30



Midday Peak Hour Report — Start Time: 13:00



PM Peak Hour Report — Start Time: 16:15



Ontario

Ministry of Transportation

TVIS II - Traffic Volume Information System

Turning Movement 15 Minute Report

Description: Hwy 115 @ Peterborough City Rd 10 (SRT)
Region: EASTERN **Survey Type:** TM – Interchange **Hwy:** 115
Start Date: 30-Oct-2018 (Tue) **I/C Side:** S **LHRS:** 42245
End Date: 30-Oct-2018 (Tue) **Int. Type:** Four Leg **Offset:** 0
Schedule Summary: TUES-THURS, 07:00-09:00, 11:00-14:00, 15:00-18:00

	Major Road Approaches																					Minor Road Approaches																					
	North Peterborough City Rd 10										South Peterborough City Rd 10										East Syer Line: Ramp(s): none										West Hwy 115										
Start Time	Cars			Trucks			Long Trucks			Ped	Cars			Trucks			Long Trucks			Ped	Cars			Trucks			Long Trucks			Ped	Cars			Trucks			Heavy Trucks			Ped	Total Veh.
	←	↑	→	←	↑	→	←	↑	→		←	↑	→	←	↑	→	←	↑	→		←	↑	→	←	↑	→	←	↑	→		←	↑	→	←	↑	→	←	↑	→		
Period 1																																											
07:00	0	26	1	0	0	0	0	0	0	0	17	13	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0	1	0	0	0	1	0	2	0	65
07:15	1	28	2	0	0	0	1	3	0	0	24	9	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	7	0	1	0	0	0	1	0	0	0	80
07:30	1	40	3	0	3	0	1	0	0	0	34	20	1	0	0	0	1	2	0	0	2	2	3	0	0	0	0	0	0	8	0	3	0	0	0	0	0	1	0	125
07:45	3	61	5	0	3	0	0	1	2	0	29	22	2	2	1	0	1	0	0	0	0	1	4	0	0	0	0	0	0	7	0	2	0	0	0	1	0	1	0	148
08:00	3	32	4	0	1	0	0	0	1	0	30	24	0	0	2	0	0	3	0	0	2	0	1	0	0	0	0	0	0	9	0	1	0	0	0	1	0	1	0	115
08:15	4	39	1	0	1	0	0	0	0	0	38	18	3	1	2	0	1	0	0	0	4	0	0	0	0	0	0	0	0	2	0	4	0	0	0	0	0	0	0	118
08:30	1	31	1	0	1	0	0	1	0	0	27	18	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	4	1	1	0	0	0	1	0	1	0	90
08:45	2	29	5	0	0	0	0	1	1	0	19	13	1	1	1	0	0	0	0	0	0	0	4	0	0	0	0	0	0	5	2	4	1	0	0	1	0	0	0	90
Period 2																																											
11:00	5	29	4	0	2	1	0	0	1	0	19	12	1	1	0	0	1	1	0	0	4	1	5	0	0	0	0	0	0	6	0	1	0	0	0	1	0	0	0	95
11:15	2	23	2	0	2	0	0	1	0	0	21	15	1	1	0	0	1	4	0	0	2	1	2	0	0	0	0	0	0	9	2	3	0	0	0	0	0	0	0	92
11:30	5	29	4	0	2	0	0	1	0	0	13	15	2	0	1	0	0	0	0	0	3	1	3	0	0	0	0	0	0	2	0	6	2	0	0	0	0	2	0	91
11:45	3	19	2	0	1	0	0	0	0	0	7	17	0	0	0	0	0	2	0	0	3	0	2	0	0	0	0	0	0	3	2	0	0	0	1	1	0	0	0	63
12:00	2	26	4	0	0	0	0	1	0	0	16	17	1	1	1	0	0	1	0	0	5	0	2	0	0	0	0	0	0	7	0	1	0	0	0	0	0	1	0	86
12:15	4	28	5	0	3	0	0	2	0	0	9	18	4	3	2	0	0	2	0	0	1	0	2	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	87
12:30	2	27	4	0	0	0	0	0	0	0	18	18	6	1	0	0	0	0	0	0	5	0	0	1	0	0	0	0	0	5	1	0	0	1	0	0	0	2	0	91
12:45	3	30	2	0	0	1	0	0	0	0	9	13	3	0	2	0	0	3	0	0	2	1	1	0	0	0	0	0	0	4	0	2	0	0	0	0	0	0	0	76
13:00	4	21	3	0	2	1	0	1	1	0	19	17	6	0	0	0	0	1	0	0	1	2	3	0	0	1	0	0	0	8	1	0	0	0	0	1	0	0	0	93
13:15	7	24	3	0	2	1	0	0	0	0	21	10	0	0	1	0	0	1	0	0	2	0	3	0	0	0	0	0	0	8	0	2	0	0	0	0	0	0	0	85
13:30	0	30	3	0	0	0	0	0	1	0	15	15	4	1	4	0	0	0	0	0	2	1	4	0	0	0	0	0	0	6	2	1	0	0	0	0	0	3	0	92
13:45	2	31	4	0	1	0	0	0	1	0	15	21	3	0	0	0	0	2	0	0	0	2	4	0	0	0	0	0	0	2	2	0	0	0	0	2	0	0	0	92
Period 3																																											
15:00	3	28	1	0	0	1	1	1	1	0	26	26	2	2	2	0	3	1	0	0	0	1	6	0	0	0	0	1	2	0	12	0	3	0	0	0	1	0	0	0	124
15:15	7	40	6	0	0	1	1	1	0	0	8	20	3	1	0	0	1	0	0	0	2	1	2	0	0	0	0	0	0	13	0	3	0	0	0	0	0	2	0	112

Ontario

Ministry of Transportation

TVIS II - Traffic Volume Information System

Turning Movement 15 Minute Report

Description: Hwy 115 @ Peterborough City Rd 10 (SRT)

Region: EASTERN | Survey Type: TM – Interchange | Hwy: 115

Start Date: 30-Oct-2018 (Tue) | I/C Side: S | LHRS: 42245

End Date: 30-Oct-2018 (Tue) | Int. Type: Four Leg | Offset: 0

Schedule Summary: TUES-THURS, 07:00-09:00, 11:00-14:00, 15:00-18:00

Start	Major Road Approaches																				Minor Road Approaches																				Total
	North Peterborough City Rd 10										South Peterborough City Rd 10										East Syer Line: Ramp(s): none										West Hwy 115										
Time	Cars			Trucks			Long Trucks			Ped	Cars			Trucks			Long Trucks			Ped	Cars			Trucks			Long Trucks			Ped	Cars			Trucks			Heavy Trucks			Ped	Veh.
	←	↑	→	←	↑	→	←	↑	→		←	↑	→	←	↑	→	←	↑	→		←	↑	→	←	↑	→	←	↑	→		←	↑	→	←	↑	→	←	↑	→		
15:30	6	45	6	0	0	0	0	1	0	0	17	17	3	1	0	0	0	1	0	0	3	1	3	0	0	0	0	0	0	0	25	0	0	1	0	0	0	0	1	0	131
15:45	3	27	1	0	3	0	0	2	0	0	12	16	3	0	1	0	0	2	0	0	3	1	4	0	0	0	0	0	0	0	22	2	2	0	0	0	0	0	1	0	105
16:00	4	29	6	0	1	0	0	0	0	0	12	16	0	0	0	0	0	3	0	0	3	0	3	0	0	0	0	0	0	0	18	3	6	1	0	0	0	0	0	0	105
16:15	1	44	4	0	0	0	0	3	0	0	16	26	2	0	0	0	0	2	0	0	1	0	4	0	0	0	0	0	0	0	28	2	7	1	0	0	1	0	0	0	142
16:30	3	57	10	0	1	3	0	1	1	0	22	31	1	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	19	0	4	0	0	0	0	0	2	0	158
16:45	4	63	4	0	0	0	0	0	0	0	17	25	3	0	2	0	0	3	0	0	2	2	2	0	0	0	0	0	0	0	20	3	11	0	0	0	0	0	0	0	161
17:00	0	58	3	0	0	1	0	0	1	0	17	20	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	33	3	7	0	0	1	2	0	0	0	150
17:15	0	62	4	0	0	0	0	1	0	0	14	17	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	24	2	4	0	0	0	0	0	0	0	131
17:30	4	48	3	0	0	0	0	0	0	0	17	18	0	0	0	0	1	0	0	0	2	0	5	0	0	0	0	0	0	0	26	1	5	1	0	0	0	0	0	0	131
17:45	1	40	6	0	0	0	0	0	0	0	12	16	2	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	31	2	4	0	0	0	0	0	0	0	117

Ontario

Ministry of Transportation

TVIS II - Traffic Volume Information System

Turning Movement Total Count and Peak Summary Report

Description: HWY 115 @ PETERBOROUGH RD 10 / SYER LINE (NRT)

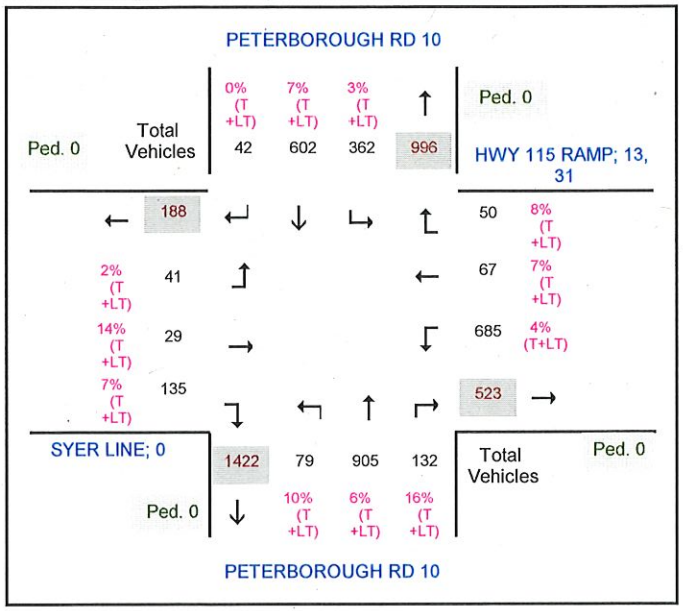
Region: EASTERN | **Survey Type:** TM – Interchange | **Hwy:** 115

Start Date: 30-Oct-2018 (Tue) | **I/C Side:** N | **LHRS:** 42245

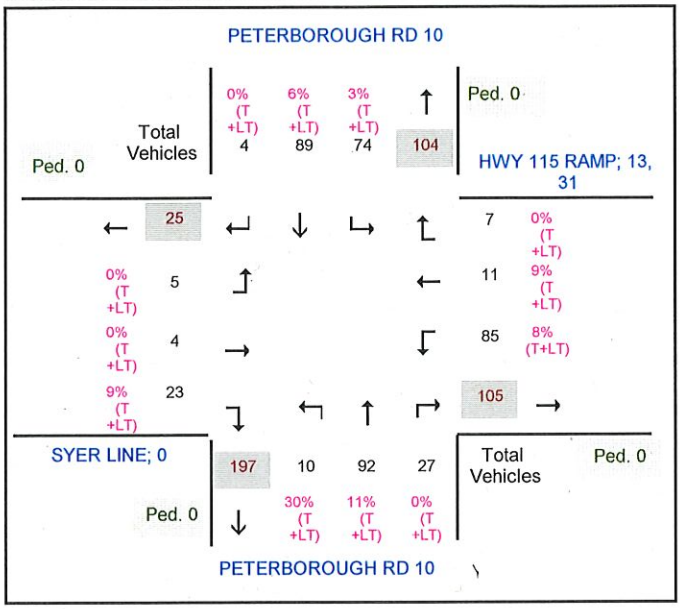
End Date: 30-Oct-2018 (Tue) | **Int. Type:** Four Leg | **Offset:** 0

Schedule Summary: TUES-THURS, 07:00-09:00, 11:00-14:00, 15:00-18:00

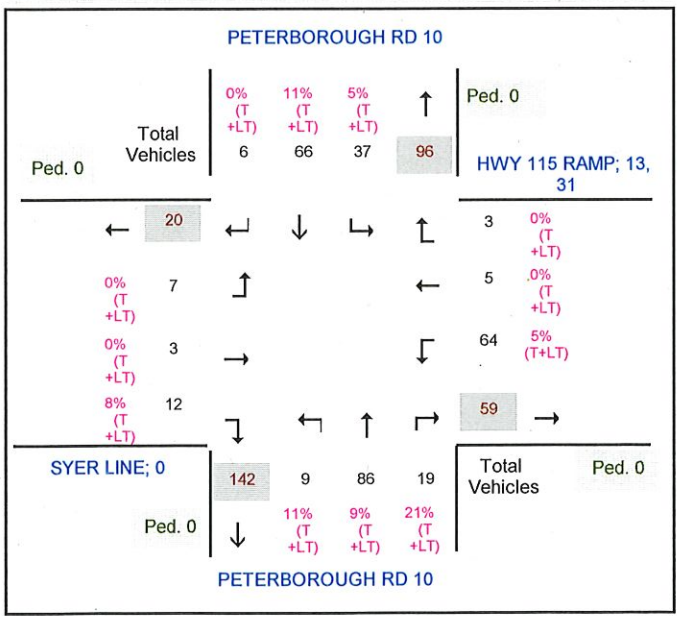
Total Count — Number of hours: 8



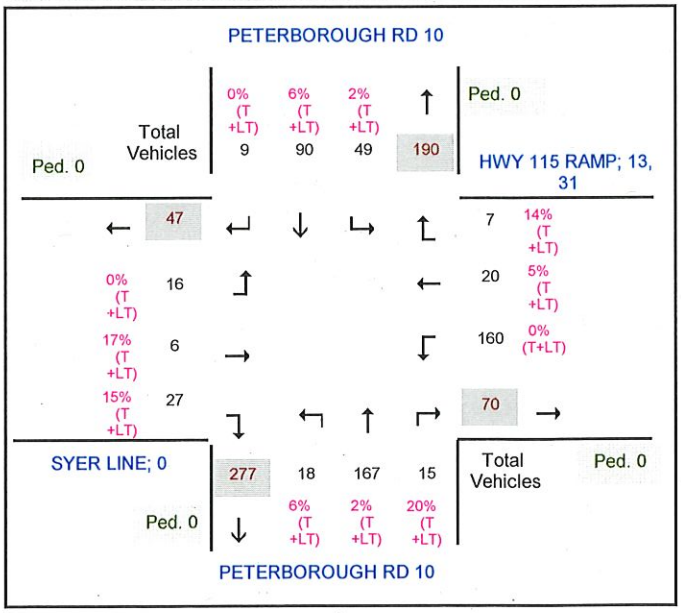
AM Peak Hour Report — Start Time: 07:15



Midday Peak Hour Report — Start Time: 13:00



PM Peak Hour Report — Start Time: 16:30



Ontario

Ministry of Transportation

TVIS II - Traffic Volume Information System

Turning Movement 15 Minute Report

Description: HWY 115 @ PETERBOROUGH RD 10 / SYER LINE (NRT)
Region: EASTERN **Survey Type:** TM – Interchange **Hwy:** 115
Start Date: 30-Oct-2018 (Tue) **I/C Side:** N **LHRS:** 42245
End Date: 30-Oct-2018 (Tue) **Int. Type:** Four Leg **Offset:** 0
Schedule Summary: TUES-THURS, 07:00-09:00, 11:00-14:00, 15:00-18:00

	Major Road Approaches																					Minor Road Approaches																					
	North PETERBOROUGH RD 10										South PETERBOROUGH RD 10										East HWY 115 RAMP: Ramp(s): 13, 31										West SYER LINE										
Start Time	Cars			Trucks			Long Trucks			Ped	Cars			Trucks			Long Trucks			Ped	Cars			Trucks			Long Trucks			Ped	Cars			Trucks			Heavy Trucks			Ped	Total Veh.
	←	↑	→	←	↑	→	←	↑	→		←	↑	→	←	↑	→	←	↑	→		←	↑	→	←	↑	→	←	↑	→		←	↑	→	←	↑	→	←	↑	→		
Period 1																																											
07:00	27	8	3	0	0	0	0	0	0	0	1	12	3	0	0	0	0	1	0	0	15	1	2	0	0	0	1	1	0	0	1	3	3	0	0	0	0	1	0	0	83
07:15	25	17	1	0	0	0	0	1	0	0	2	12	5	0	1	0	1	1	0	0	11	6	3	0	0	0	2	0	0	0	1	1	6	0	0	0	0	0	0	0	96
07:30	25	23	1	0	1	0	0	0	0	0	0	24	5	0	0	0	1	1	0	0	19	2	2	3	0	0	0	0	0	0	0	2	2	0	0	0	0	0	1	0	112
07:45	13	24	1	0	1	0	1	1	0	0	3	23	9	0	1	0	0	1	0	0	37	2	2	1	1	0	1	0	0	0	1	1	5	0	0	0	0	0	0	0	129
08:00	9	20	1	1	1	0	0	0	0	0	2	23	8	0	2	0	1	3	0	0	11	0	0	0	0	0	0	0	0	0	3	0	8	0	0	0	0	0	1	0	94
08:15	15	23	3	1	1	0	0	0	0	0	1	17	4	0	2	0	0	0	0	0	20	1	2	0	0	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	95
08:30	16	15	0	0	1	0	0	1	0	0	2	18	3	0	0	0	0	1	0	0	13	2	1	0	0	0	0	1	0	0	1	1	3	0	0	0	0	1	0	0	80
08:45	17	13	1	0	0	0	0	1	0	0	0	16	6	0	2	0	0	1	0	0	18	3	1	0	0	1	1	0	0	0	0	1	5	0	0	0	0	0	0	0	87
Period 2																																										
11:00	8	15	2	0	3	0	0	0	0	0	1	22	2	0	0	0	1	0	1	0	15	1	2	1	0	0	0	0	0	0	1	0	7	0	0	0	0	0	1	0	83
11:15	15	16	1	0	0	0	0	1	0	0	2	21	2	0	0	0	0	2	2	0	11	2	0	1	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	79
11:30	11	19	0	1	0	0	0	0	0	0	0	18	3	0	2	0	0	0	0	0	15	0	3	2	0	0	1	0	0	0	0	0	3	0	0	0	0	0	0	0	78
11:45	8	15	0	1	0	0	0	0	0	0	2	20	0	0	0	0	0	1	2	0	9	0	2	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	62
12:00	6	17	0	0	0	0	0	1	0	0	1	23	1	0	1	0	0	1	0	0	13	2	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	69
12:15	9	15	1	1	3	0	0	1	0	0	3	15	4	0	2	0	0	1	1	0	17	0	1	0	0	1	1	0	0	0	1	0	5	0	0	0	0	0	0	0	82
12:30	8	16	3	0	0	0	1	0	0	0	0	21	2	0	0	0	0	0	0	0	16	0	0	0	0	0	0	1	0	0	1	0	2	0	0	0	0	1	0	0	72
12:45	9	15	0	0	1	0	0	0	0	0	0	16	3	0	1	1	0	0	3	0	21	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	73
13:00	7	11	0	0	1	0	0	1	0	0	2	23	1	0	0	1	1	0	1	0	9	1	0	2	0	0	0	0	0	0	1	0	6	0	0	0	0	0	1	0	69
13:15	10	17	1	0	2	0	0	0	0	0	1	15	6	0	1	0	0	1	0	0	16	1	0	1	0	0	0	0	0	0	3	0	2	0	0	0	0	0	0	0	77
13:30	13	13	3	1	0	0	0	1	0	0	3	18	4	0	4	0	0	0	0	0	19	0	1	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	0	83
13:45	5	18	2	1	1	0	0	1	0	0	2	22	4	0	0	0	0	2	2	0	17	3	2	0	0	0	0	0	0	0	1	3	2	0	0	0	0	0	0	0	88
Period 3																																										
15:00	6	14	1	0	1	0	0	2	0	0	3	38	5	0	2	0	2	1	1	0	15	1	1	0	0	0	0	0	0	0	1	0	3	0	0	0	1	0	1	0	99
15:15	2	21	1	0	0	0	0	2	0	0	3	29	1	0	0	0	0	0	0	0	26	3	3	1	0	0	0	0	0	0	0	1	6	0	0	0	0	0	0	0	99

Ontario

Ministry of Transportation

TVIS II - Traffic Volume Information System

Turning Movement 15 Minute Report

Description: HWY 115 @ PETERBOROUGH RD 10 / SYER LINE (NRT)

Region: EASTERN | Survey Type: TM – Interchange | Hwy: 115

Start Date: 30-Oct-2018 (Tue) | I/C Side: N | LHRS: 42245

End Date: 30-Oct-2018 (Tue) | Int. Type: Four Leg | Offset: 0

Schedule Summary: TUES-THURS, 07:00-09:00, 11:00-14:00, 15:00-18:00

	Major Road Approaches																					Minor Road Approaches																					
	North PETERBOROUGH RD 10										South PETERBOROUGH RD 10										East HWY 115 RAMP: Ramp(s): 13, 31										West SYER LINE											
Start Time	Cars			Trucks			Long Trucks			Ped	Cars			Trucks			Long Trucks			Ped	Cars			Trucks			Long Trucks			Ped	Cars			Trucks			Heavy Trucks			Ped	Total Veh.
	←	↑	→	←	↑	→	←	↑	→		←	↑	→	←	↑	→	←	↑	→		←	↑	→	←	↑	→	←	↑	→		←	↑	→	←	↑	→	←	↑	→		
15:30	7	24	2	0	0	0	0	0	0	0	4	34	6	0	1	0	0	0	0	0	24	4	1	0	0	0	1	0	0	0	1	1	9	0	0	0	0	0	0	0	119
15:45	4	11	0	0	1	0	0	1	0	0	1	37	3	0	1	0	0	2	1	0	17	2	2	2	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	88
16:00	5	13	2	0	0	0	1	0	0	0	2	34	3	0	1	0	0	1	2	0	23	0	2	1	0	0	0	0	0	0	0	1	4	0	0	0	0	0	0	0	95
16:15	6	20	2	0	0	0	0	3	0	0	5	50	3	0	1	0	0	3	0	0	22	3	1	0	0	0	0	0	0	0	2	0	7	0	0	0	0	0	0	0	128
16:30	10	22	3	0	1	0	0	2	0	0	6	38	6	0	0	0	0	0	0	0	37	4	1	0	0	0	0	1	0	0	6	1	11	0	0	3	0	1	0	0	153
16:45	14	21	2	0	0	0	1	0	0	0	5	40	3	0	1	1	0	1	2	0	47	5	1	0	0	0	0	0	0	0	3	1	2	0	0	0	0	0	0	0	150
17:00	9	16	4	0	1	0	0	0	0	0	6	45	1	0	0	0	1	1	0	0	39	5	0	0	0	0	0	0	0	0	5	2	6	0	0	0	0	0	1	0	142
17:15	15	26	0	0	0	0	0	1	0	0	0	41	2	0	0	0	0	0	0	0	37	5	4	0	0	1	0	0	0	0	2	1	4	0	0	0	0	0	0	0	139
17:30	10	27	0	0	0	0	0	0	0	0	4	41	3	0	1	0	0	0	0	0	26	1	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	116
17:45	7	16	1	0	0	0	0	0	0	0	4	46	0	0	0	0	0	0	0	0	26	2	3	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	110

Ontario Traffic Inc

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 10:00:00

One Hour Peak
From: 7:30:00
To: 8:30:00

Municipality: Millbrook
Site #: 1710800002
Intersection: County Rd 10 & Larmer Line
TFR File #: 1
Count date: 25-Apr-17

Weather conditions:

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: County Rd 10 runs N/S

North Leg Total:	404
North Entering:	167
North Peds:	0
Peds Cross:	⋈

Heavys	0	0	0	0
Trucks	2	6	0	8
Cars	1	153	5	159
Totals	3	159	5	

Heavys	0
Trucks	13
Cars	224
Totals	237

East Leg Total:	34
East Entering:	15
East Peds:	0
Peds Cross:	⧖

County Rd 10

Heavys	Trucks	Cars	Totals
0	2	9	11

Cars	Trucks	Heavys	Totals
9	0	0	9
2	0	0	2
4	0	0	4
15	0	0	

Larmer Line

N
W E
S

Heavys	Trucks	Cars	Totals
0	0	23	23
0	0	4	4
0	2	8	10
0	2	35	

Larmer Line

Cars	Trucks	Heavys	Totals
19	0	0	19

County Rd 10

Peds Cross:	⧖
West Peds:	0
West Entering:	37
West Leg Total:	48

Cars	165			
Trucks	8			
Heavys	0			
Totals	173			

Cars	6	192	10	208
Trucks	0	13	0	13
Heavys	0	0	0	0
Totals	6	205	10	

Peds Cross:	⋈
South Peds:	0
South Entering:	221
South Leg Total:	394

Comments

Ontario Traffic Inc

Afternoon Peak Diagram

Specified Period
From: 16:00:00
To: 19:00:00

One Hour Peak
From: 16:30:00
To: 17:30:00

Municipality: Millbrook
Site #: 1710800002
Intersection: County Rd 10 & Larmer Line
TFR File #: 1
Count date: 25-Apr-17

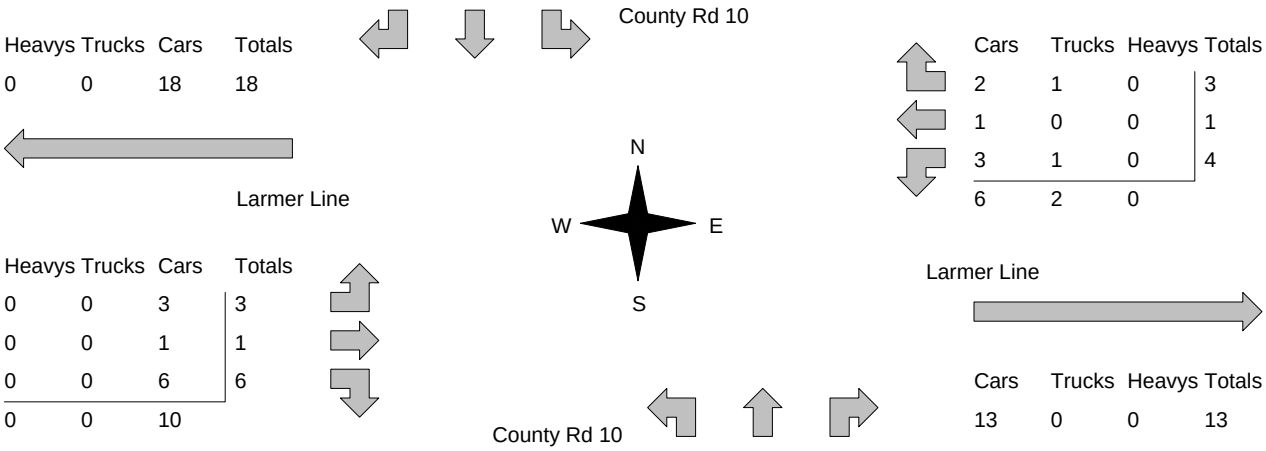
Weather conditions:

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: County Rd 10 runs N/S

North Leg Total:	413			
North Entering:	242			
North Peds:	0			
Peds Cross:	⋈			
Heavys	0	0	0	0
Trucks	0	3	0	3
Cars	9	222	8	239
Totals	9	225	8	
Heavys	0			
Trucks	2			
Cars	169			
Totals	171			
East Leg Total:	21			
East Entering:	8			
East Peds:	0			
Peds Cross:	⧖			



Peds Cross:	⧖			
West Peds:	0			
West Entering:	10			
West Leg Total:	28			
Cars	231			
Trucks	4			
Heavys	0			
Totals	235			
Cars	8	164	4	176
Trucks	0	1	0	1
Heavys	0	0	0	0
Totals	8	165	4	
Peds Cross:	⋈			
South Peds:	0			
South Entering:	177			
South Leg Total:	412			

Comments

Ontario Traffic Inc

Total Count Diagram

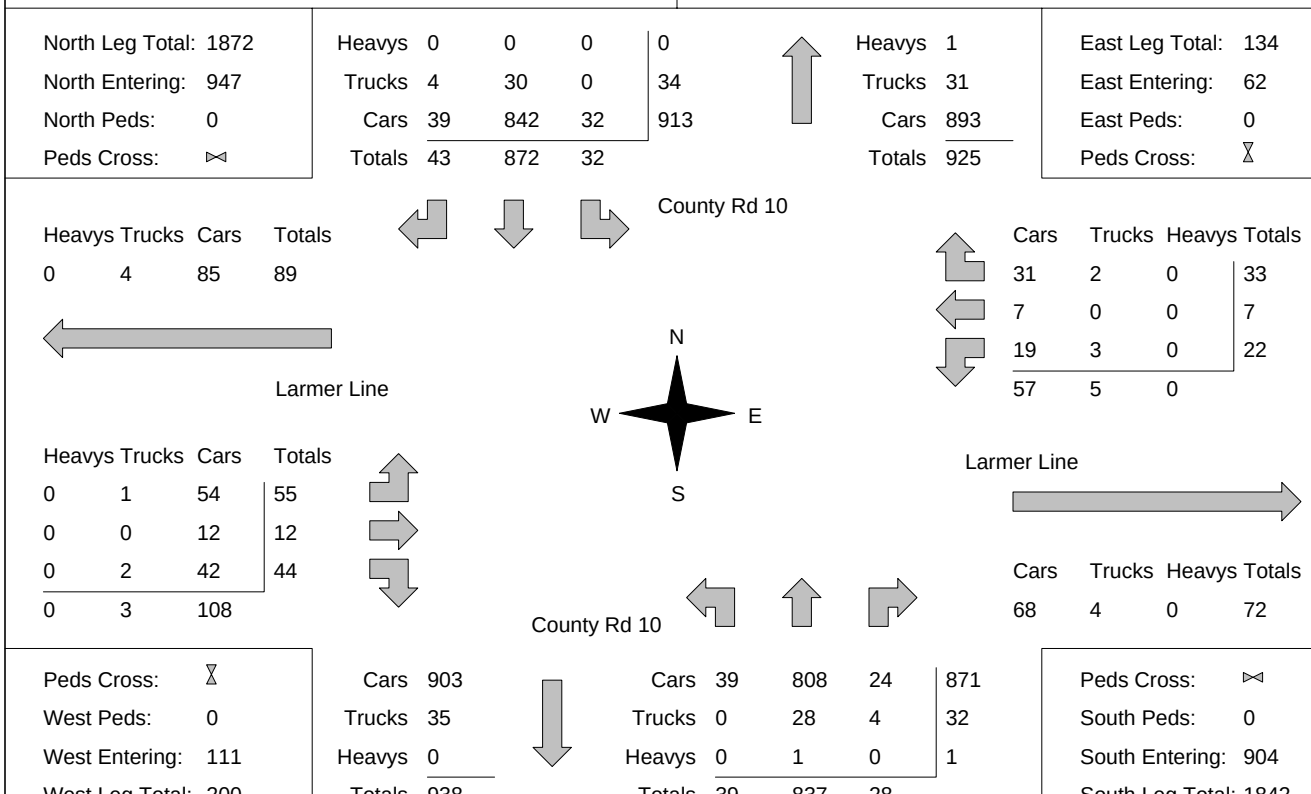
Municipality: Millbrook
Site #: 1710800002
Intersection: County Rd 10 & Larmer Line
TFR File #: 1
Count date: 25-Apr-17

Weather conditions:

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: County Rd 10 runs N/S



Comments

Ontario Traffic Inc
Traffic Count Summary

Intersection: County Rd 10 & Larmer Line | **Count Date:** 25-Apr-17 | **Municipality:** Millbrook

North Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys: Left	Thru	Right	Grand Total	Total Peds	North/South Total Approaches
7:00:00	0	0	0	0	0	0
8:00:00	1	125	5	131	0	300
9:00:00	6	129	3	138	0	325
10:00:00	2	113	3	118	0	254
16:00:00	0	0	0	0	0	0
17:00:00	7	180	6	193	0	358
18:00:00	8	209	11	228	0	377
19:00:00	8	116	15	139	0	237
Totals:	32	872	43	947	0	1851

South Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys: Left	Thru	Right	Grand Total	Total Peds
7:00:00	0	0	0	0	0
8:00:00	3	162	4	169	0
9:00:00	6	171	10	187	0
10:00:00	8	124	4	136	0
16:00:00	0	0	0	0	0
17:00:00	7	152	6	165	0
18:00:00	7	140	2	149	0
19:00:00	8	88	2	98	0
	39	837	28	904	0

East Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys: Left	Thru	Right	Grand Total	Total Peds	East/West Total Approaches
7:00:00	0	0	0	0	0	0
8:00:00	4	1	16	21	0	53
9:00:00	2	1	3	6	0	36
10:00:00	1	1	6	8	0	20
16:00:00	0	0	0	0	0	0
17:00:00	7	0	5	12	0	26
18:00:00	2	1	1	4	0	13
19:00:00	6	3	2	11	0	25
Totals:	22	7	33	62	0	173

West Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys: Left	Thru	Right	Grand Total	Total Peds
7:00:00	0	0	0	0	0
8:00:00	22	2	8	32	0
9:00:00	16	4	10	30	0
10:00:00	4	1	7	12	0
16:00:00	0	0	0	0	0
17:00:00	2	2	10	14	0
18:00:00	2	3	4	9	0
19:00:00	9	0	5	14	0
	55	12	44	111	0

Calculated Values for Traffic Crossing Major Street

Hours Ending:	7:00	8:00	9:00	10:00	16:00	17:00	18:00	19:00
Crossing Values:	0	28	22	6	0	11	7	18

Ontario Traffic Inc

Count Date: 25-Apr-17 Site #: 1710800002

Interval Time	Passenger Cars - North Approach						Trucks - North Approach						Heavys - North Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		North Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	0	0	11	11	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0
7:30:00	0	0	34	23	2	2	0	0	2	1	1	0	0	0	0	0	0	0	0	0
7:45:00	1	1	66	32	3	1	0	0	4	2	1	0	0	0	0	0	0	0	0	0
8:00:00	1	0	119	53	3	0	0	0	6	2	2	1	0	0	0	0	0	0	0	0
8:15:00	4	3	151	32	3	0	0	0	8	2	3	1	0	0	0	0	0	0	0	0
8:30:00	5	1	187	36	3	0	0	0	8	0	3	0	0	0	0	0	0	0	0	0
8:45:00	6	1	210	23	3	0	0	0	9	1	3	0	0	0	0	0	0	0	0	0
9:00:00	7	1	242	32	5	2	0	0	12	3	3	0	0	0	0	0	0	0	0	0
9:15:00	7	0	268	26	6	1	0	0	15	3	4	1	0	0	0	0	0	0	0	0
9:30:00	7	0	280	12	6	0	0	0	15	0	4	0	0	0	0	0	0	0	0	0
9:45:00	7	0	305	25	6	0	0	0	19	4	4	0	0	0	0	0	0	0	0	0
10:00:00	9	2	345	40	7	1	0	0	22	3	4	0	0	0	0	0	0	0	0	0
10:05:45	9	0	345	0	7	0	0	0	22	0	4	0	0	0	0	0	0	0	0	0
16:00:00	9	0	345	0	7	0	0	0	22	0	4	0	0	0	0	0	0	0	0	0
16:15:00	10	1	382	37	7	0	0	0	24	2	4	0	0	0	0	0	0	0	0	0
16:30:00	12	2	411	29	9	2	0	0	25	1	4	0	0	0	0	0	0	0	0	0
16:45:00	14	2	458	47	12	3	0	0	25	0	4	0	0	0	0	0	0	0	0	0
17:00:00	16	2	521	63	13	1	0	0	26	1	4	0	0	0	0	0	0	0	0	0
17:15:00	18	2	572	51	16	3	0	0	27	1	4	0	0	0	0	0	0	0	0	0
17:30:00	20	2	633	61	18	2	0	0	28	1	4	0	0	0	0	0	0	0	0	0
17:45:00	21	1	681	48	21	3	0	0	28	0	4	0	0	0	0	0	0	0	0	0
18:00:00	24	3	728	47	24	3	0	0	28	0	4	0	0	0	0	0	0	0	0	0
18:15:00	27	3	758	30	32	8	0	0	29	1	4	0	0	0	0	0	0	0	0	0
18:30:00	28	1	795	37	33	1	0	0	29	0	4	0	0	0	0	0	0	0	0	0
18:45:00	31	3	820	25	37	4	0	0	30	1	4	0	0	0	0	0	0	0	0	0
19:00:00	32	1	842	22	39	2	0	0	30	0	4	0	0	0	0	0	0	0	0	0
19:05:10	32	0	842	0	39	0	0	0	30	0	4	0	0	0	0	0	0	0	0	0

Ontario Traffic Inc

Count Date: 25-Apr-17 Site #: 1710800002

Interval Time	Passenger Cars - East Approach						Trucks - East Approach						Heavys - East Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		East Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	2	2	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30:00	2	0	0	0	7	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45:00	3	1	1	1	11	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00:00	4	1	1	0	16	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15:00	4	0	1	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30:00	6	2	2	1	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45:00	6	0	2	0	17	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00:00	6	0	2	0	19	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15:00	6	0	2	0	21	2	1	1	0	0	1	1	0	0	0	0	0	0	0	0
9:30:00	6	0	3	1	22	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0
9:45:00	6	0	3	0	23	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0
10:00:00	6	0	3	0	24	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0
10:05:45	6	0	3	0	24	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
16:00:00	6	0	3	0	24	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
16:15:00	8	2	3	0	26	2	1	0	0	0	1	0	0	0	0	0	0	0	0	0
16:30:00	9	1	3	0	27	1	2	1	0	0	1	0	0	0	0	0	0	0	0	0
16:45:00	10	1	3	0	27	0	3	1	0	0	2	1	0	0	0	0	0	0	0	0
17:00:00	11	1	3	0	28	1	3	0	0	0	2	0	0	0	0	0	0	0	0	0
17:15:00	12	1	3	0	29	1	3	0	0	0	2	0	0	0	0	0	0	0	0	0
17:30:00	12	0	4	1	29	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0
17:45:00	12	0	4	0	29	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0
18:00:00	13	1	4	0	29	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0
18:15:00	17	4	6	2	30	1	3	0	0	0	2	0	0	0	0	0	0	0	0	0
18:30:00	17	0	6	0	30	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0
18:45:00	19	2	6	0	30	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0
19:00:00	19	0	7	1	31	1	3	0	0	0	2	0	0	0	0	0	0	0	0	0
19:05:10	19	0	7	0	31	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0

Ontario Traffic Inc

Count Date: 25-Apr-17 Site #: 1710800002

Interval Time	Passenger Cars - South Approach						Trucks - South Approach						Heavys - South Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		South Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	0	0	24	24	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
7:30:00	1	1	54	30	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0
7:45:00	1	0	102	48	1	1	0	0	4	4	2	0	0	0	0	0	0	0	0	0
8:00:00	3	2	155	53	2	1	0	0	7	3	2	0	0	0	0	0	0	0	0	0
8:15:00	5	2	199	44	5	3	0	0	11	4	2	0	0	0	0	0	0	0	0	0
8:30:00	7	2	246	47	10	5	0	0	13	2	2	0	0	0	0	0	0	0	0	0
8:45:00	9	2	286	40	11	1	0	0	15	2	2	0	0	0	0	0	0	0	0	0
9:00:00	9	0	315	29	11	0	0	0	18	3	3	1	0	0	0	0	0	0	0	0
9:15:00	10	1	340	25	12	1	0	0	18	0	3	0	0	0	0	0	0	0	0	0
9:30:00	12	2	364	24	12	0	0	0	21	3	3	0	0	0	0	0	0	0	0	0
9:45:00	14	2	398	34	13	1	0	0	23	2	4	1	0	0	0	0	0	0	0	0
10:00:00	17	3	431	33	14	1	0	0	26	3	4	0	0	0	0	0	0	0	0	0
10:05:45	17	0	431	0	14	0	0	0	26	0	4	0	0	0	0	0	0	0	0	0
16:00:00	17	0	431	0	14	0	0	0	26	0	4	0	0	0	0	0	0	0	0	0
16:15:00	19	2	465	34	14	0	0	0	27	1	4	0	0	0	0	0	0	0	0	0
16:30:00	20	1	504	39	16	2	0	0	27	0	4	0	0	0	0	0	0	0	0	0
16:45:00	23	3	550	46	17	1	0	0	27	0	4	0	0	0	0	0	0	0	0	0
17:00:00	24	1	581	31	20	3	0	0	28	1	4	0	0	0	0	0	0	0	0	0
17:15:00	27	3	640	59	20	0	0	0	28	0	4	0	0	0	0	0	0	0	0	0
17:30:00	28	1	668	28	20	0	0	0	28	0	4	0	0	0	0	0	0	0	0	0
17:45:00	30	2	691	23	22	2	0	0	28	0	4	0	0	0	0	0	0	0	0	0
18:00:00	31	1	721	30	22	0	0	0	28	0	4	0	0	0	0	0	0	0	0	0
18:15:00	32	1	755	34	22	0	0	0	28	0	4	0	0	0	0	0	0	0	0	0
18:30:00	36	4	776	21	23	1	0	0	28	0	4	0	0	0	0	0	0	0	0	0
18:45:00	38	2	793	17	24	1	0	0	28	0	4	0	0	0	1	1	0	0	0	0
19:00:00	39	1	808	15	24	0	0	0	28	0	4	0	0	0	1	0	0	0	0	0
19:05:10	39	0	808	0	24	0	0	0	28	0	4	0	0	0	1	0	0	0	0	0

Ontario Traffic Inc

Count Date: 25-Apr-17 Site #: 1710800002

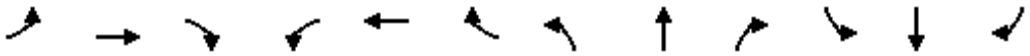
Interval Time	Passenger Cars - West Approach						Trucks - West Approach						Heavys - West Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		West Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	6	6	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30:00	8	2	0	0	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45:00	16	8	0	0	5	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0
8:00:00	22	6	2	2	7	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0
8:15:00	28	6	2	0	11	4	0	0	0	0	2	1	0	0	0	0	0	0	0	0
8:30:00	31	3	4	2	12	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0
8:45:00	35	4	5	1	13	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0
9:00:00	38	3	6	1	16	3	0	0	0	0	2	0	0	0	0	0	0	0	0	0
9:15:00	38	0	7	1	18	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0
9:30:00	39	1	7	0	18	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
9:45:00	41	2	7	0	20	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0
10:00:00	42	1	7	0	23	3	0	0	0	0	2	0	0	0	0	0	0	0	0	0
10:05:45	42	0	7	0	23	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
16:00:00	42	0	7	0	23	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
16:15:00	42	0	8	1	28	5	0	0	0	0	2	0	0	0	0	0	0	0	0	0
16:30:00	42	0	9	1	30	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0
16:45:00	44	2	9	0	33	3	0	0	0	0	2	0	0	0	0	0	0	0	0	0
17:00:00	44	0	9	0	33	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
17:15:00	44	0	9	0	36	3	0	0	0	0	2	0	0	0	0	0	0	0	0	0
17:30:00	45	1	10	1	36	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
17:45:00	46	1	11	1	37	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0
18:00:00	46	0	12	1	37	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
18:15:00	52	6	12	0	39	2	1	1	0	0	2	0	0	0	0	0	0	0	0	0
18:30:00	54	2	12	0	41	2	1	0	0	0	2	0	0	0	0	0	0	0	0	0
18:45:00	54	0	12	0	42	1	1	0	0	0	2	0	0	0	0	0	0	0	0	0
19:00:00	54	0	12	0	42	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0
19:05:10	54	0	12	0	42	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0

Appendix D –
Synchro Analysis Output –
Existing Traffic Volumes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	4	25	93	12	8	11	211	30	81	109	4
Future Volume (Veh/h)	5	4	25	93	12	8	11	211	30	81	109	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	6	5	30	111	14	10	13	251	36	96	130	5
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	636	638	132	650	622	269	135			287		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	636	638	132	650	622	269	135			287		
tC, single (s)	7.1	6.5	6.3	7.1	6.6	6.3	4.4			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.1	3.4	2.5			2.2		
p0 queue free %	98	99	97	68	96	99	99			92		
cM capacity (veh/h)	352	364	898	345	360	755	1294			1269		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	41	135	300	96	135
Volume Left	6	111	13	96	0
Volume Right	30	10	36	0	5
cSH	639	361	1294	1269	1700
Volume to Capacity	0.06	0.37	0.01	0.08	0.08
Queue Length 95th (m)	1.6	13.5	0.2	2.0	0.0
Control Delay (s)	11.0	20.8	0.4	8.1	0.0
Lane LOS	B	C	A	A	
Approach Delay (s)	11.0	20.8	0.4	3.4	
Approach LOS	B	C			

Intersection Summary				
Average Delay	5.9			
Intersection Capacity Utilization	44.7%	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)	31	0	14	9	3	9	150	212	6	13	196	18
Future Volume (Veh/h)	31	0	14	9	3	9	150	212	6	13	196	18
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	36	0	16	11	4	11	176	249	7	15	231	21
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	886	880	242	892	886	252	252			256		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	886	880	242	892	886	252	252			256		
tC, single (s)	7.2	6.5	6.4	7.1	6.5	6.2	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.5	3.5	4.0	3.3	2.2			2.3		
p0 queue free %	84	100	98	95	98	99	86			99		
cM capacity (veh/h)	225	246	748	230	244	791	1302			1275		

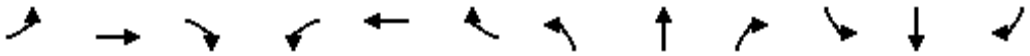
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	52	26	176	256	267
Volume Left	36	11	176	0	15
Volume Right	16	11	0	7	21
cSH	287	333	1302	1700	1275
Volume to Capacity	0.18	0.08	0.14	0.15	0.01
Queue Length 95th (m)	5.2	2.0	3.7	0.0	0.3
Control Delay (s)	20.3	16.7	8.2	0.0	0.5
Lane LOS	C	C	A		A
Approach Delay (s)	20.3	16.7	3.3		0.5
Approach LOS	C	C			

Intersection Summary				
Average Delay	4.0			
Intersection Capacity Utilization	40.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	7	29	175	22	8	19	258	16	54	184	10
Future Volume (Veh/h)	17	7	29	175	22	8	19	258	16	54	184	10
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	18	7	31	184	23	8	20	272	17	57	194	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	654	642	200	663	640	280	205			289		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	654	642	200	663	640	280	205			289		
tC, single (s)	7.1	6.7	6.4	7.1	6.5	6.3	4.2			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.2	3.4	3.5	4.0	3.4	2.3			2.2		
p0 queue free %	95	98	96	46	94	99	99			96		
cM capacity (veh/h)	345	351	810	341	367	731	1343			1273		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	56	215	309	57	205
Volume Left	18	184	20	57	0
Volume Right	31	8	17	0	11
cSH	507	351	1343	1273	1700
Volume to Capacity	0.11	0.61	0.01	0.04	0.12
Queue Length 95th (m)	3.0	30.9	0.4	1.1	0.0
Control Delay (s)	13.0	30.2	0.6	8.0	0.0
Lane LOS	B	D	A	A	
Approach Delay (s)	13.0	30.2	0.6	1.7	
Approach LOS	B	D			

Intersection Summary				
Average Delay	9.3			
Intersection Capacity Utilization	57.1%	ICU Level of Service	B	
Analysis Period (min)	15			

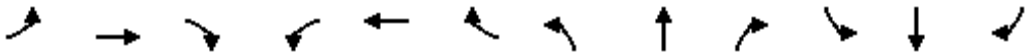


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	114	9	35	3	5	8	80	171	9	9	349	30
Future Volume (Veh/h)	114	9	35	3	5	8	80	171	9	9	349	30
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	120	9	37	3	5	8	84	180	9	9	367	32
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	760	758	383	795	770	184	399			189		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	760	758	383	795	770	184	399			189		
tC, single (s)	7.1	6.5	6.3	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	59	97	94	99	98	99	93			99		
cM capacity (veh/h)	295	312	649	267	308	863	1165			1397		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	166	16	84	189	408
Volume Left	120	3	84	0	9
Volume Right	37	8	0	9	32
cSH	337	435	1165	1700	1397
Volume to Capacity	0.49	0.04	0.07	0.11	0.01
Queue Length 95th (m)	20.8	0.9	1.9	0.0	0.2
Control Delay (s)	25.6	13.6	8.3	0.0	0.2
Lane LOS	D	B	A		A
Approach Delay (s)	25.6	13.6	2.6		0.2
Approach LOS	D	B			

Intersection Summary				
Average Delay	6.1			
Intersection Capacity Utilization	59.2%	ICU Level of Service	B	
Analysis Period (min)	15			

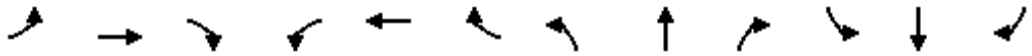
Appendix E –
Synchro Analysis Output –
Background Traffic Volumes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	4	28	312	13	9	12	252	48	91	131	4
Future Volume (Veh/h)	6	4	28	312	13	9	12	252	48	91	131	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	7	5	33	371	15	11	14	300	57	108	156	5
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	750	760	158	764	734	328	161			357		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	750	760	158	764	734	328	161			357		
tC, single (s)	7.1	6.5	6.3	7.1	6.6	6.3	4.4			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.1	3.4	2.5			2.2		
p0 queue free %	98	98	96	0	95	98	99			91		
cM capacity (veh/h)	289	304	869	283	305	699	1264			1196		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	45	397	371	108	161
Volume Left	7	371	14	108	0
Volume Right	33	11	57	0	5
cSH	572	289	1264	1196	1700
Volume to Capacity	0.08	1.37	0.01	0.09	0.09
Queue Length 95th (m)	2.0	165.7	0.3	2.4	0.0
Control Delay (s)	11.8	223.4	0.4	8.3	0.0
Lane LOS	B	F	A	A	
Approach Delay (s)	11.8	223.4	0.4	3.3	
Approach LOS	B	F			

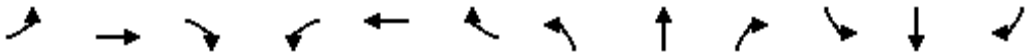
Intersection Summary				
Average Delay	83.4			
Intersection Capacity Utilization	62.8%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	0	24	10	3	10	539	267	7	14	435	20
Future Volume (Veh/h)	35	0	24	10	3	10	539	267	7	14	435	20
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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)	41	0	28	12	4	12	634	314	8	16	512	24
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	2152	2146	524	2170	2154	318	536			322		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2152	2146	524	2170	2154	318	536			322		
tC, single (s)	7.2	6.5	6.4	7.1	6.5	6.2	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.5	3.5	4.0	3.3	2.2			2.3		
p0 queue free %	0	100	95	26	78	98	38			99		
cM capacity (veh/h)	14	18	514	16	18	727	1022			1205		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	69	28	634	322	552
Volume Left	41	12	634	0	16
Volume Right	28	12	0	8	24
cSH	23	29	1022	1700	1205
Volume to Capacity	2.97	0.98	0.62	0.19	0.01
Queue Length 95th (m)	69.6	25.6	35.9	0.0	0.3
Control Delay (s)	1238.9	361.9	14.1	0.0	0.4
Lane LOS	F	F	B		A
Approach Delay (s)	1238.9	361.9	9.3		0.4
Approach LOS	F	F			

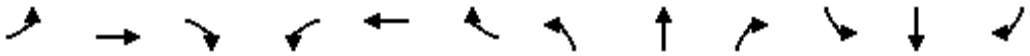
Intersection Summary				
Average Delay	65.3			
Intersection Capacity Utilization	74.8%	ICU Level of Service	D	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	8	32	587	25	9	21	299	28	60	222	11
Future Volume (Veh/h)	19	8	32	587	25	9	21	299	28	60	222	11
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	20	8	34	618	26	9	22	315	29	63	234	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	762	754	240	772	746	330	246			344		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	762	754	240	772	746	330	246			344		
tC, single (s)	7.1	6.7	6.4	7.1	6.5	6.3	4.2			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.2	3.4	3.5	4.0	3.4	2.3			2.2		
p0 queue free %	93	97	96	0	92	99	98			95		
cM capacity (veh/h)	284	299	768	283	316	685	1297			1215		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	62	653	366	63	246
Volume Left	20	618	22	63	0
Volume Right	34	9	29	0	12
cSH	439	287	1297	1215	1700
Volume to Capacity	0.14	2.28	0.02	0.05	0.14
Queue Length 95th (m)	3.9	404.8	0.4	1.3	0.0
Control Delay (s)	14.6	613.2	0.6	8.1	0.0
Lane LOS	B	F	A	A	
Approach Delay (s)	14.6	613.2	0.6	1.7	
Approach LOS	B	F			

Intersection Summary			
Average Delay	289.3		
Intersection Capacity Utilization	87.6%	ICU Level of Service	E
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	128	10	54	3	6	9	376	213	10	10	795	34
Future Volume (Veh/h)	128	10	54	3	6	9	376	213	10	10	795	34
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	135	11	57	3	6	9	396	224	11	11	837	36
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	1905	1904	855	1961	1916	230	873			235		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1905	1904	855	1961	1916	230	873			235		
tC, single (s)	7.1	6.5	6.3	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	67	84	84	82	99	49			99		
cM capacity (veh/h)	27	34	348	18	33	815	777			1344		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	203	18	396	235	884
Volume Left	135	3	396	0	11
Volume Right	57	9	0	11	36
cSH	36	51	777	1700	1344
Volume to Capacity	5.58	0.35	0.51	0.14	0.01
Queue Length 95th (m)	Err	10.1	23.5	0.0	0.2
Control Delay (s)	Err	110.5	14.3	0.0	0.2
Lane LOS	F	F	B		A
Approach Delay (s)	Err	110.5	9.0		0.2
Approach LOS	F	F			

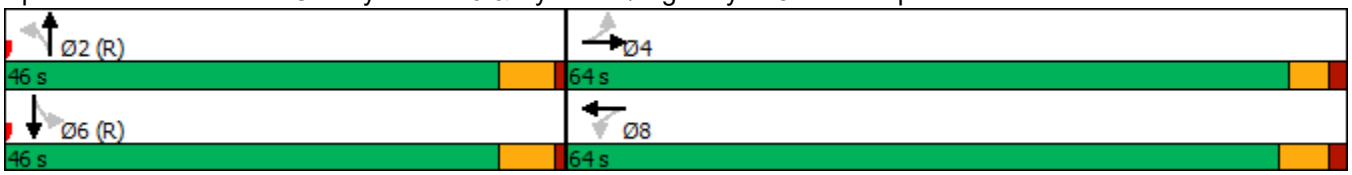
Intersection Summary				
Average Delay	1173.8			
Intersection Capacity Utilization	99.4%	ICU Level of Service		F
Analysis Period (min)	15			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	6	4	312	13	12	252	91	131
Future Volume (vph)	6	4	312	13	12	252	91	131
Lane Group Flow (vph)	0	45	0	397	0	371	108	161
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	20.0	20.0	20.0	20.0
Minimum Split (s)	39.2	39.2	39.2	39.2	25.6	25.6	25.6	25.6
Total Split (s)	64.0	64.0	64.0	64.0	46.0	46.0	46.0	46.0
Total Split (%)	58.2%	58.2%	58.2%	58.2%	41.8%	41.8%	41.8%	41.8%
Yellow Time (s)	3.3	3.3	4.2	4.2	4.6	4.6	4.6	4.6
All-Red Time (s)	1.6	1.6	1.6	1.6	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)		4.9		5.8		5.6	5.6	5.6
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	C-Max	C-Max	C-Max	C-Max
v/c Ratio		0.06		0.61		0.65	0.42	0.27
Control Delay		5.7		23.0		34.6	32.3	25.6
Queue Delay		0.0		0.0		0.0	0.0	0.0
Total Delay		5.7		23.0		34.6	32.3	25.6
Queue Length 50th (m)		1.2		59.5		67.2	18.0	24.9
Queue Length 95th (m)		6.0		83.1		91.9	32.5	38.4
Internal Link Dist (m)		592.7		625.0		491.5		559.6
Turn Bay Length (m)							82.0	
Base Capacity (vph)		768		649		570	257	605
Starvation Cap Reductn		0		0		0	0	0
Spillback Cap Reductn		0		0		0	0	0
Storage Cap Reductn		0		0		0	0	0
Reduced v/c Ratio		0.06		0.61		0.65	0.42	0.27

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 1: County Road 10 & Syer Line/Highway 115 SB Ramp



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	4	28	312	13	9	12	252	48	91	131	4
Future Volume (vph)	6	4	28	312	13	9	12	252	48	91	131	4
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.9			5.8			5.6		5.6	5.6	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frt		0.90			1.00			0.98		1.00	1.00	
Flt Protected		0.99			0.96			1.00		0.95	1.00	
Satd. Flow (prot)		1468			1656			1555		1614	1646	
Flt Permitted		0.95			0.71			0.99		0.41	1.00	
Satd. Flow (perm)		1403			1226			1538		700	1646	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	7	5	33	371	15	11	14	300	57	108	156	5
RTOR Reduction (vph)	0	15	0	0	1	0	0	6	0	0	1	0
Lane Group Flow (vph)	0	30	0	0	396	0	0	365	0	108	160	0
Heavy Vehicles (%)	0%	0%	9%	0%	9%	8%	30%	11%	0%	3%	6%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		59.1			58.2			40.4		40.4	40.4	
Effective Green, g (s)		59.1			58.2			40.4		40.4	40.4	
Actuated g/C Ratio		0.54			0.53			0.37		0.37	0.37	
Clearance Time (s)		4.9			5.8			5.6		5.6	5.6	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		753			648			564		257	604	
v/s Ratio Prot											0.10	
v/s Ratio Perm		0.02			c0.32			c0.24		0.15		
v/c Ratio		0.04			0.61			0.65		0.42	0.26	
Uniform Delay, d1		12.0			18.0			28.9		26.0	24.4	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.1			4.3			5.7		5.0	1.1	
Delay (s)		12.1			22.3			34.6		31.0	25.5	
Level of Service		B			C			C		C	C	
Approach Delay (s)		12.1			22.3			34.6			27.7	
Approach LOS		B			C			C			C	

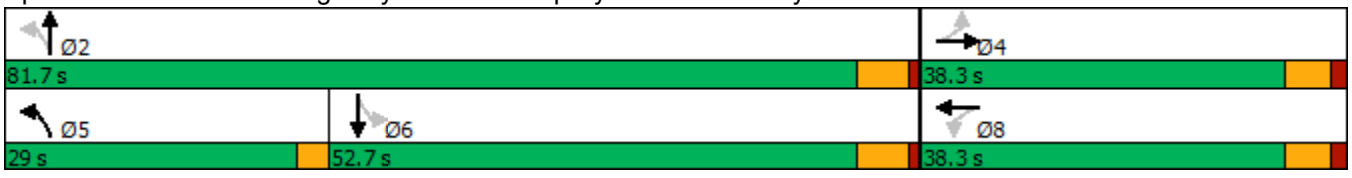
Intersection Summary			
HCM 2000 Control Delay	27.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	11.4
Intersection Capacity Utilization	75.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	35	0	10	3	539	267	14	435
Future Volume (vph)	35	0	10	3	539	267	14	435
Lane Group Flow (vph)	0	69	0	28	634	322	0	552
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases		4		8	5	2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	20.0	20.0	20.0
Minimum Split (s)	38.3	38.3	38.3	38.3	9.5	28.4	28.4	28.4
Total Split (s)	38.3	38.3	38.3	38.3	29.0	81.7	52.7	52.7
Total Split (%)	31.9%	31.9%	31.9%	31.9%	24.2%	68.1%	43.9%	43.9%
Yellow Time (s)	4.2	4.2	4.2	4.2	3.0	4.6	4.6	4.6
All-Red Time (s)	1.6	1.6	1.6	1.6	0.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0		0.0
Total Lost Time (s)		5.8		5.8	3.0	5.6		5.6
Lead/Lag					Lead		Lag	Lag
Lead-Lag Optimize?					Yes		Yes	Yes
Recall Mode	None	None	None	None	None	Max	Max	Max
v/c Ratio		0.40		0.17	0.82	0.25		0.68
Control Delay		24.2		29.9	17.0	3.3		24.3
Queue Delay		0.0		0.0	0.0	0.0		0.0
Total Delay		24.2		29.9	17.0	3.3		24.3
Queue Length 50th (m)		3.3		2.9	36.7	13.8		82.3
Queue Length 95th (m)		14.9		10.6	#85.0	22.1		115.6
Internal Link Dist (m)		658.6		1175.6		599.4		491.5
Turn Bay Length (m)					85.0			
Base Capacity (vph)		436		506	776	1293		813
Starvation Cap Reductn		0		0	0	0		0
Spillback Cap Reductn		0		0	0	0		0
Storage Cap Reductn		0		0	0	0		0
Reduced v/c Ratio		0.16		0.06	0.82	0.25		0.68

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 94.7
Natural Cycle: 130
Control Type: Semi Act-Uncoord
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 115 NB Ramp/Syer Line & County Road 10



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	0	24	10	3	10	539	267	7	14	435	20
Future Volume (vph)	35	0	24	10	3	10	539	267	7	14	435	20
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		5.8			5.8		3.0	5.6			5.6	
Lane Util. Factor		1.00			1.00		1.00	1.00			1.00	
Frt		0.95			0.94		1.00	1.00			0.99	
Flt Protected		0.97			0.98		0.95	1.00			1.00	
Satd. Flow (prot)		1415			1614		1599	1575			1644	
Flt Permitted		0.80			0.88		0.36	1.00			0.99	
Satd. Flow (perm)		1168			1445		599	1575			1624	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	41	0	28	12	4	12	634	314	8	16	512	24
RTOR Reduction (vph)	0	47	0	0	11	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	22	0	0	17	0	634	322	0	0	551	0
Heavy Vehicles (%)	7%	0%	23%	0%	0%	0%	4%	11%	0%	8%	5%	19%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		8.1			8.1		76.5	76.5			47.4	
Effective Green, g (s)		8.1			8.1		76.5	76.5			47.4	
Actuated g/C Ratio		0.08			0.08		0.80	0.80			0.49	
Clearance Time (s)		5.8			5.8		3.0	5.6			5.6	
Vehicle Extension (s)		3.0			3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		98			121		749	1255			801	
v/s Ratio Prot							c0.23	0.20				
v/s Ratio Perm		c0.02			0.01		c0.44				0.34	
v/c Ratio		0.23			0.14		0.85	0.26			0.69	
Uniform Delay, d1		41.0			40.7		9.0	2.5			18.6	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		1.2			0.5		8.7	0.5			4.8	
Delay (s)		42.2			41.3		17.7	3.0			23.4	
Level of Service		D			D		B	A			C	
Approach Delay (s)		42.2			41.3			12.7			23.4	
Approach LOS		D			D			B			C	

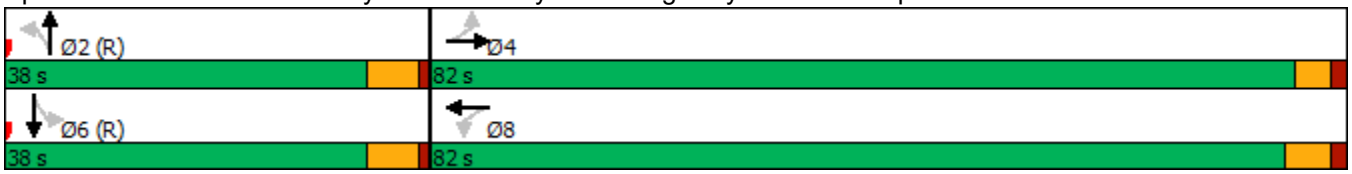
Intersection Summary			
HCM 2000 Control Delay	18.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	96.0	Sum of lost time (s)	14.4
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	19	8	587	25	21	299	60	222
Future Volume (vph)	19	8	587	25	21	299	60	222
Lane Group Flow (vph)	0	62	0	653	0	366	63	246
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	20.0	20.0	20.0	20.0
Minimum Split (s)	39.2	39.2	39.2	39.2	25.6	25.6	25.6	25.6
Total Split (s)	82.0	82.0	82.0	82.0	38.0	38.0	38.0	38.0
Total Split (%)	68.3%	68.3%	68.3%	68.3%	31.7%	31.7%	31.7%	31.7%
Yellow Time (s)	3.3	3.3	4.2	4.2	4.6	4.6	4.6	4.6
All-Red Time (s)	1.6	1.6	1.6	1.6	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)		4.9		5.8		5.6	5.6	5.6
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	C-Max	C-Max	C-Max	C-Max
v/c Ratio		0.08		0.85		0.83	0.43	0.55
Control Delay		4.6		30.7		58.2	47.2	42.8
Queue Delay		0.0		0.0		0.0	0.0	0.0
Total Delay		4.6		30.7		58.2	47.2	42.8
Queue Length 50th (m)		2.4		119.7		84.8	12.9	52.0
Queue Length 95th (m)		7.6		#212.9		#135.8	28.6	79.5
Internal Link Dist (m)		592.7		625.0		491.5		559.6
Turn Bay Length (m)							82.0	
Base Capacity (vph)		772		764		440	146	445
Starvation Cap Reductn		0		0		0	0	0
Spillback Cap Reductn		0		0		0	0	0
Storage Cap Reductn		0		0		0	0	0
Reduced v/c Ratio		0.08		0.85		0.83	0.43	0.55

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: County Road 10 & Syer Line/Highway 115 SB Ramp



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	8	32	587	25	9	21	299	28	60	222	11
Future Volume (vph)	19	8	32	587	25	9	21	299	28	60	222	11
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.9			5.8			5.6		5.6	5.6	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frt		0.93			1.00			0.99		1.00	0.99	
Flt Protected		0.98			0.95			1.00		0.95	1.00	
Satd. Flow (prot)		1444			1661			1665		1630	1643	
Flt Permitted		0.81			0.69			0.97		0.32	1.00	
Satd. Flow (perm)		1185			1205			1619		542	1643	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	20	8	34	618	26	9	22	315	29	63	234	12
RTOR Reduction (vph)	0	12	0	0	0	0	0	3	0	0	1	0
Lane Group Flow (vph)	0	50	0	0	653	0	0	363	0	63	245	0
Heavy Vehicles (%)	0%	17%	15%	0%	5%	14%	6%	2%	20%	2%	6%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		77.1			76.2			32.4		32.4	32.4	
Effective Green, g (s)		77.1			76.2			32.4		32.4	32.4	
Actuated g/C Ratio		0.64			0.64			0.27		0.27	0.27	
Clearance Time (s)		4.9			5.8			5.6		5.6	5.6	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		761			765			437		146	443	
v/s Ratio Prot											0.15	
v/s Ratio Perm		0.04			c0.54			c0.22		0.12		
v/c Ratio		0.07			0.85			0.83		0.43	0.55	
Uniform Delay, d1		8.0			17.4			41.2		36.2	37.6	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.2			11.6			16.6		9.0	4.9	
Delay (s)		8.2			29.1			57.8		45.2	42.5	
Level of Service		A			C			E		D	D	
Approach Delay (s)		8.2			29.1			57.8			43.0	
Approach LOS		A			C			E			D	

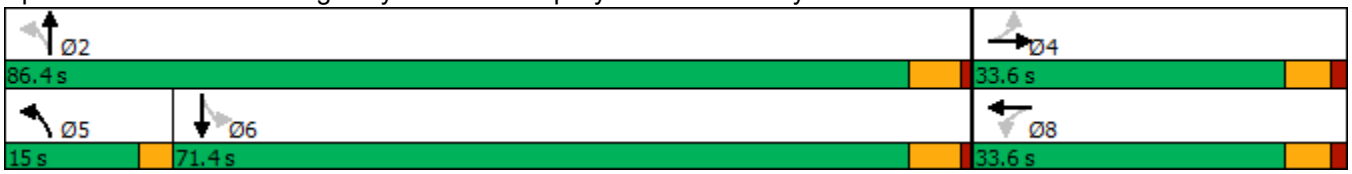
Intersection Summary			
HCM 2000 Control Delay	38.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.4
Intersection Capacity Utilization	91.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

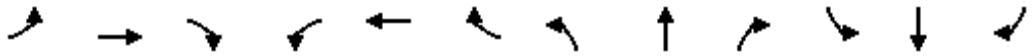
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	128	10	3	6	376	213	10	795
Future Volume (vph)	128	10	3	6	376	213	10	795
Lane Group Flow (vph)	0	203	0	18	396	235	0	884
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases		4		8	5	2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	20.0	20.0	20.0
Minimum Split (s)	33.6	33.6	33.6	33.6	9.5	25.6	25.6	25.6
Total Split (s)	33.6	33.6	33.6	33.6	15.0	86.4	71.4	71.4
Total Split (%)	28.0%	28.0%	28.0%	28.0%	12.5%	72.0%	59.5%	59.5%
Yellow Time (s)	4.2	4.2	4.2	4.2	3.0	4.6	4.6	4.6
All-Red Time (s)	1.6	1.6	1.6	1.6	0.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0		0.0
Total Lost Time (s)		5.8		5.8	3.0	5.6		5.6
Lead/Lag					Lead		Lag	Lag
Lead-Lag Optimize?					Yes		Yes	Yes
Recall Mode	None	None	None	None	None	Max	Max	Max
v/c Ratio		0.82		0.06	0.87	0.20		0.90
Control Delay		66.1		25.2	29.0	6.6		36.3
Queue Delay		0.0		0.0	0.0	0.0		0.0
Total Delay		66.1		25.2	29.0	6.6		36.3
Queue Length 50th (m)		42.7		1.8	29.0	16.4		175.4
Queue Length 95th (m)		70.8		8.1	#79.5	30.7		#296.6
Internal Link Dist (m)		658.6		1175.6		599.4		491.5
Turn Bay Length (m)					85.0			
Base Capacity (vph)		321		387	456	1172		980
Starvation Cap Reductn		0		0	0	0		0
Spillback Cap Reductn		0		0	0	0		0
Storage Cap Reductn		0		0	0	0		0
Reduced v/c Ratio		0.63		0.05	0.87	0.20		0.90

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 113.7
Natural Cycle: 120
Control Type: Semi Act-Uncoord
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 115 NB Ramp/Syer Line & County Road 10





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	128	10	54	3	6	9	376	213	10	10	795	34
Future Volume (vph)	128	10	54	3	6	9	376	213	10	10	795	34
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		5.8			5.8		3.0	5.6			5.6	
Lane Util. Factor		1.00			1.00		1.00	1.00			1.00	
Frt		0.96			0.93		1.00	0.99			0.99	
Flt Protected		0.97			0.99		0.95	1.00			1.00	
Satd. Flow (prot)		1549			1618		1646	1644			1692	
Flt Permitted		0.79			0.95		0.26	1.00			1.00	
Satd. Flow (perm)		1263			1555		448	1644			1686	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	135	11	57	3	6	9	396	224	11	11	837	36
RTOR Reduction (vph)	0	12	0	0	7	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	191	0	0	11	0	396	234	0	0	883	0
Heavy Vehicles (%)	4%	0%	9%	0%	0%	0%	1%	6%	0%	0%	2%	22%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		21.2			21.2		81.0	81.0			66.0	
Effective Green, g (s)		21.2			21.2		81.0	81.0			66.0	
Actuated g/C Ratio		0.19			0.19		0.71	0.71			0.58	
Clearance Time (s)		5.8			5.8		3.0	5.6			5.6	
Vehicle Extension (s)		3.0			3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		235			290		445	1172			979	
v/s Ratio Prot							c0.09	0.14				
v/s Ratio Perm		c0.15			0.01		c0.54				0.52	
v/c Ratio		0.81			0.04		0.89	0.20			0.90	
Uniform Delay, d1		44.3			37.8		11.6	5.5			20.9	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		18.8			0.1		19.1	0.4			13.0	
Delay (s)		63.1			37.9		30.7	5.8			34.0	
Level of Service		E			D		C	A			C	
Approach Delay (s)		63.1			37.9			21.4			34.0	
Approach LOS		E			D			C			C	

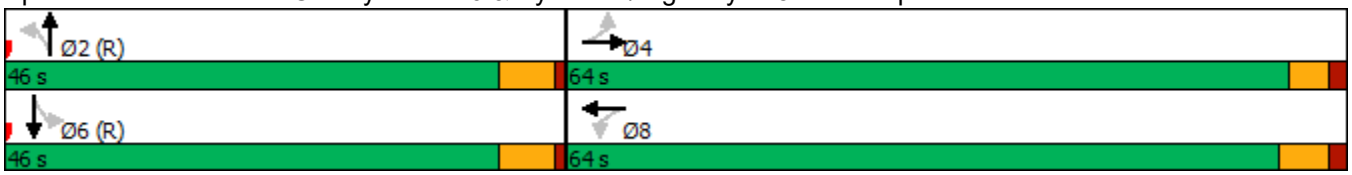
Intersection Summary			
HCM 2000 Control Delay	32.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	113.6	Sum of lost time (s)	14.4
Intersection Capacity Utilization	103.6%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

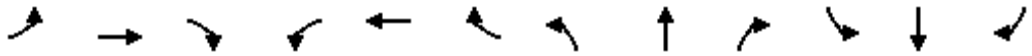
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	6	5	340	15	13	280	102	146
Future Volume (vph)	6	5	340	15	13	280	102	146
Lane Group Flow (vph)	0	49	0	441	0	412	121	180
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	20.0	20.0	20.0	20.0
Minimum Split (s)	39.2	39.2	39.2	39.2	25.6	25.6	25.6	25.6
Total Split (s)	64.0	64.0	64.0	64.0	46.0	46.0	46.0	46.0
Total Split (%)	58.2%	58.2%	58.2%	58.2%	41.8%	41.8%	41.8%	41.8%
Yellow Time (s)	3.3	3.3	4.2	4.2	4.6	4.6	4.6	4.6
All-Red Time (s)	1.6	1.6	1.6	1.6	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)		4.9		5.8		5.6	5.6	5.6
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	C-Max	C-Max	C-Max	C-Max
v/c Ratio		0.06		0.68		0.72	0.51	0.30
Control Delay		5.6		25.6		37.8	36.5	26.1
Queue Delay		0.0		0.0		0.0	0.0	0.0
Total Delay		5.6		25.6		37.8	36.5	26.1
Queue Length 50th (m)		1.3		69.7		77.4	21.1	28.2
Queue Length 95th (m)		6.4		96.9		104.7	37.8	42.7
Internal Link Dist (m)		592.7		625.0		491.5		559.6
Turn Bay Length (m)							82.0	
Base Capacity (vph)		769		648		570	236	605
Starvation Cap Reductn		0		0		0	0	0
Spillback Cap Reductn		0		0		0	0	0
Storage Cap Reductn		0		0		0	0	0
Reduced v/c Ratio		0.06		0.68		0.72	0.51	0.30

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 1: County Road 10 & Syer Line/Highway 115 SB Ramp





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	5	30	340	15	15	13	280	54	102	146	5
Future Volume (vph)	6	5	30	340	15	15	13	280	54	102	146	5
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.9			5.8			5.6		5.6	5.6	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frt		0.90			0.99			0.98		1.00	0.99	
Flt Protected		0.99			0.96			1.00		0.95	1.00	
Satd. Flow (prot)		1468			1652			1555		1614	1646	
Flt Permitted		0.95			0.71			0.99		0.38	1.00	
Satd. Flow (perm)		1402			1224			1538		643	1646	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	7	6	36	405	18	18	15	333	64	121	174	6
RTOR Reduction (vph)	0	17	0	0	1	0	0	6	0	0	1	0
Lane Group Flow (vph)	0	32	0	0	440	0	0	406	0	121	179	0
Heavy Vehicles (%)	0%	0%	9%	0%	9%	8%	30%	11%	0%	3%	6%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		59.1			58.2			40.4		40.4	40.4	
Effective Green, g (s)		59.1			58.2			40.4		40.4	40.4	
Actuated g/C Ratio		0.54			0.53			0.37		0.37	0.37	
Clearance Time (s)		4.9			5.8			5.6		5.6	5.6	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		753			647			564		236	604	
v/s Ratio Prot											0.11	
v/s Ratio Perm		0.02			c0.36			c0.26		0.19		
v/c Ratio		0.04			0.68			0.72		0.51	0.30	
Uniform Delay, d1		12.1			19.0			29.9		27.1	24.7	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.1			5.7			7.7		7.8	1.2	
Delay (s)		12.2			24.7			37.6		34.9	26.0	
Level of Service		B			C			D		C	C	
Approach Delay (s)		12.2			24.7			37.6			29.5	
Approach LOS		B			C			D			C	

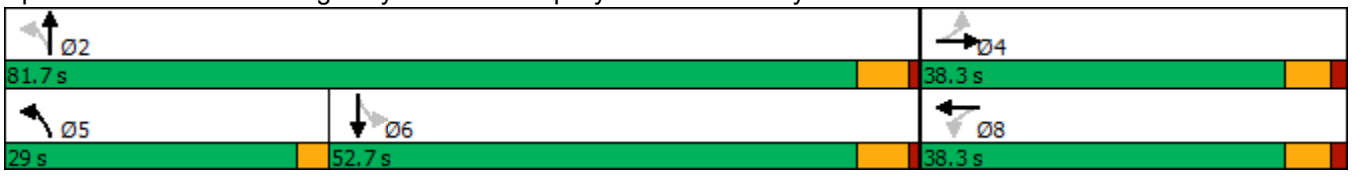
Intersection Summary			
HCM 2000 Control Delay	29.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	11.4
Intersection Capacity Utilization	80.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	40	0	11	4	609	296	16	474
Future Volume (vph)	40	0	11	4	609	296	16	474
Lane Group Flow (vph)	0	79	0	31	716	356	0	605
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases		4		8	5	2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	20.0	20.0	20.0
Minimum Split (s)	38.3	38.3	38.3	38.3	9.5	28.4	28.4	28.4
Total Split (s)	38.3	38.3	38.3	38.3	29.0	81.7	52.7	52.7
Total Split (%)	31.9%	31.9%	31.9%	31.9%	24.2%	68.1%	43.9%	43.9%
Yellow Time (s)	4.2	4.2	4.2	4.2	3.0	4.6	4.6	4.6
All-Red Time (s)	1.6	1.6	1.6	1.6	0.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0		0.0
Total Lost Time (s)		5.8		5.8	3.0	5.6		5.6
Lead/Lag					Lead		Lag	Lag
Lead-Lag Optimize?					Yes		Yes	Yes
Recall Mode	None	None	None	None	None	Max	Max	Max
v/c Ratio		0.45		0.18	0.95	0.28		0.75
Control Delay		27.4		29.8	36.7	3.6		27.6
Queue Delay		0.0		0.0	0.0	0.0		0.0
Total Delay		27.4		29.8	36.7	3.6		27.6
Queue Length 50th (m)		5.2		3.3	71.1	15.7		95.0
Queue Length 95th (m)		18.0		11.3	#104.4	26.6		136.3
Internal Link Dist (m)		658.6		1175.6		599.4		491.5
Turn Bay Length (m)					85.0			
Base Capacity (vph)		434		501	750	1291		807
Starvation Cap Reductn		0		0	0	0		0
Spillback Cap Reductn		0		0	0	0		0
Storage Cap Reductn		0		0	0	0		0
Reduced v/c Ratio		0.18		0.06	0.95	0.28		0.75

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 94.9
Natural Cycle: 150
Control Type: Semi Act-Uncoord
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 115 NB Ramp/Syer Line & County Road 10



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	0	27	11	4	11	609	296	7	16	474	24
Future Volume (vph)	40	0	27	11	4	11	609	296	7	16	474	24
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		5.8			5.8		3.0	5.6			5.6	
Lane Util. Factor		1.00			1.00		1.00	1.00			1.00	
Frt		0.95			0.94		1.00	1.00			0.99	
Flt Protected		0.97			0.98		0.95	1.00			1.00	
Satd. Flow (prot)		1416			1617		1599	1575			1642	
Flt Permitted		0.80			0.87		0.33	1.00			0.98	
Satd. Flow (perm)		1165			1433		555	1575			1617	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	47	0	32	13	5	13	716	348	8	19	558	28
RTOR Reduction (vph)	0	47	0	0	12	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	32	0	0	19	0	716	356	0	0	604	0
Heavy Vehicles (%)	7%	0%	23%	0%	0%	0%	4%	11%	0%	8%	5%	19%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		8.3			8.3		76.5	76.5			47.4	
Effective Green, g (s)		8.3			8.3		76.5	76.5			47.4	
Actuated g/C Ratio		0.09			0.09		0.80	0.80			0.49	
Clearance Time (s)		5.8			5.8		3.0	5.6			5.6	
Vehicle Extension (s)		3.0			3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		100			123		724	1252			796	
v/s Ratio Prot							c0.27	0.23				
v/s Ratio Perm		c0.03			0.01		c0.52				0.37	
v/c Ratio		0.32			0.16		0.99	0.28			0.76	
Uniform Delay, d1		41.3			40.7		14.9	2.6			19.8	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		1.9			0.6		30.3	0.6			6.7	
Delay (s)		43.2			41.3		45.3	3.2			26.5	
Level of Service		D			D		D	A			C	
Approach Delay (s)		43.2			41.3			31.3			26.5	
Approach LOS		D			D			C			C	

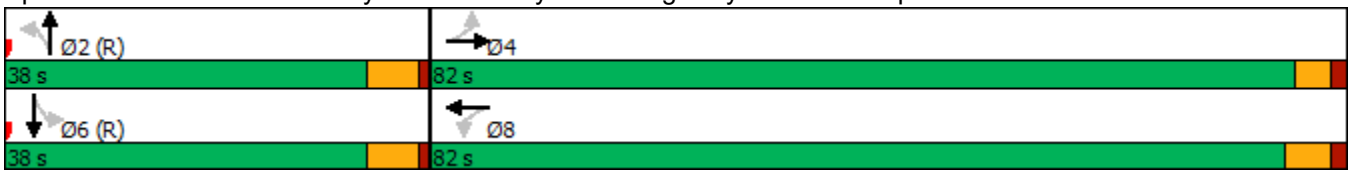
Intersection Summary			
HCM 2000 Control Delay	30.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	96.2	Sum of lost time (s)	14.4
Intersection Capacity Utilization	88.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

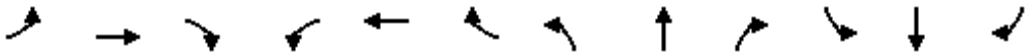
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	21	9	658	28	23	330	69	250
Future Volume (vph)	21	9	658	28	23	330	69	250
Lane Group Flow (vph)	0	68	0	734	0	403	73	276
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	20.0	20.0	20.0	20.0
Minimum Split (s)	39.2	39.2	39.2	39.2	25.6	25.6	25.6	25.6
Total Split (s)	82.0	82.0	82.0	82.0	38.0	38.0	38.0	38.0
Total Split (%)	68.3%	68.3%	68.3%	68.3%	31.7%	31.7%	31.7%	31.7%
Yellow Time (s)	3.3	3.3	4.2	4.2	4.6	4.6	4.6	4.6
All-Red Time (s)	1.6	1.6	1.6	1.6	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)		4.9		5.8		5.6	5.6	5.6
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	C-Max	C-Max	C-Max	C-Max
v/c Ratio		0.09		0.96		0.94	0.56	0.62
Control Delay		4.6		47.0		72.8	56.6	45.2
Queue Delay		0.0		0.0		0.0	0.0	0.0
Total Delay		4.6		47.0		72.8	56.6	45.2
Queue Length 50th (m)		2.6		159.2		96.9	15.6	59.7
Queue Length 95th (m)		8.1		#258.6		#160.0	#36.1	90.1
Internal Link Dist (m)		592.7		625.0		491.5		559.6
Turn Bay Length (m)							82.0	
Base Capacity (vph)		752		761		431	130	445
Starvation Cap Reductn		0		0		0	0	0
Spillback Cap Reductn		0		0		0	0	0
Storage Cap Reductn		0		0		0	0	0
Reduced v/c Ratio		0.09		0.96		0.94	0.56	0.62

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: County Road 10 & Syer Line/Highway 115 SB Ramp





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	9	35	658	28	11	23	330	30	69	250	12
Future Volume (vph)	21	9	35	658	28	11	23	330	30	69	250	12
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.9			5.8			5.6		5.6	5.6	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frt		0.93			1.00			0.99		1.00	0.99	
Flt Protected		0.98			0.95			1.00		0.95	1.00	
Satd. Flow (prot)		1445			1660			1665		1630	1644	
Flt Permitted		0.78			0.69			0.95		0.28	1.00	
Satd. Flow (perm)		1150			1197			1589		482	1644	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	22	9	37	693	29	12	24	347	32	73	263	13
RTOR Reduction (vph)	0	13	0	0	0	0	0	3	0	0	1	0
Lane Group Flow (vph)	0	55	0	0	734	0	0	400	0	73	275	0
Heavy Vehicles (%)	0%	17%	15%	0%	5%	14%	6%	2%	20%	2%	6%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		77.1			76.2			32.4		32.4	32.4	
Effective Green, g (s)		77.1			76.2			32.4		32.4	32.4	
Actuated g/C Ratio		0.64			0.64			0.27		0.27	0.27	
Clearance Time (s)		4.9			5.8			5.6		5.6	5.6	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		738			760			429		130	443	
v/s Ratio Prot											0.17	
v/s Ratio Perm		0.05			c0.61			c0.25		0.15		
v/c Ratio		0.07			0.97			0.93		0.56	0.62	
Uniform Delay, d1		8.1			20.7			42.7		37.7	38.4	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.2			25.2			29.5		16.4	6.4	
Delay (s)		8.2			45.9			72.2		54.1	44.8	
Level of Service		A			D			E		D	D	
Approach Delay (s)		8.2			45.9			72.2			46.7	
Approach LOS		A			D			E			D	

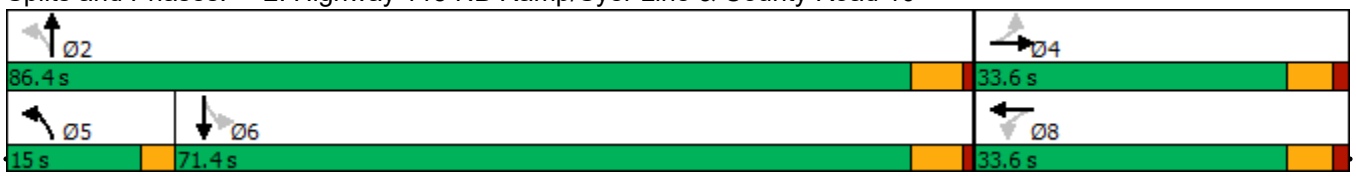
Intersection Summary			
HCM 2000 Control Delay	51.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.4
Intersection Capacity Utilization	99.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	143	11	4	6	407	233	11	886
Future Volume (vph)	143	11	4	6	407	233	11	886
Lane Group Flow (vph)	0	226	0	21	428	257	0	989
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases		4		8	5	2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	20.0	20.0	20.0
Minimum Split (s)	33.6	33.6	33.6	33.6	9.5	25.6	25.6	25.6
Total Split (s)	33.6	33.6	33.6	33.6	15.0	86.4	71.4	71.4
Total Split (%)	28.0%	28.0%	28.0%	28.0%	12.5%	72.0%	59.5%	59.5%
Yellow Time (s)	4.2	4.2	4.2	4.2	3.0	4.6	4.6	4.6
All-Red Time (s)	1.6	1.6	1.6	1.6	0.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0		0.0
Total Lost Time (s)		5.8		5.8	3.0	5.6		5.6
Lead/Lag					Lead		Lag	Lag
Lead-Lag Optimize?					Yes		Yes	Yes
Recall Mode	None	None	None	None	None	Max	Max	Max
v/c Ratio		0.85		0.07	1.05	0.22		1.03
Control Delay		69.8		24.1	70.6	7.2		63.2
Queue Delay		0.0		0.0	0.0	0.0		0.0
Total Delay		69.8		24.1	70.6	7.2		63.2
Queue Length 50th (m)		49.0		1.9	~44.6	20.7		~262.6
Queue Length 95th (m)		#86.6		8.9	#110.1	33.7		#353.7
Internal Link Dist (m)		658.6		1175.6		599.4		491.5
Turn Bay Length (m)					85.0			
Base Capacity (vph)		314		377	409	1151		960
Starvation Cap Reductn		0		0	0	0		0
Spillback Cap Reductn		0		0	0	0		0
Storage Cap Reductn		0		0	0	0		0
Reduced v/c Ratio		0.72		0.06	1.05	0.22		1.03

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 115.7
Natural Cycle: 150
Control Type: Semi Act-Uncoord
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 115 NB Ramp/Syer Line & County Road 10



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	143	11	60	4	6	10	407	233	11	11	886	42
Future Volume (vph)	143	11	60	4	6	10	407	233	11	11	886	42
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		5.8			5.8		3.0	5.6			5.6	
Lane Util. Factor		1.00			1.00		1.00	1.00			1.00	
Frt		0.96			0.93		1.00	0.99			0.99	
Flt Protected		0.97			0.99		0.95	1.00			1.00	
Satd. Flow (prot)		1549			1611		1646	1644			1690	
Flt Permitted		0.79			0.94		0.22	1.00			1.00	
Satd. Flow (perm)		1259			1533		386	1644			1684	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	151	12	63	4	6	11	428	245	12	12	933	44
RTOR Reduction (vph)	0	12	0	0	9	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	214	0	0	12	0	428	256	0	0	988	0
Heavy Vehicles (%)	4%	0%	9%	0%	0%	0%	1%	6%	0%	0%	2%	22%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		23.3			23.3		80.9	80.9			65.9	
Effective Green, g (s)		23.3			23.3		80.9	80.9			65.9	
Actuated g/C Ratio		0.20			0.20		0.70	0.70			0.57	
Clearance Time (s)		5.8			5.8		3.0	5.6			5.6	
Vehicle Extension (s)		3.0			3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		253			308		400	1150			959	
v/s Ratio Prot							c0.11	0.16				
v/s Ratio Perm		c0.17			0.01		c0.64				0.59	
v/c Ratio		0.85			0.04		1.07	0.22			1.03	
Uniform Delay, d1		44.4			37.1		15.9	6.2			24.8	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		22.1			0.1		64.9	0.4			37.0	
Delay (s)		66.5			37.2		80.8	6.6			61.8	
Level of Service		E			D		F	A			E	
Approach Delay (s)		66.5			37.2			53.0			61.8	
Approach LOS		E			D			D			E	

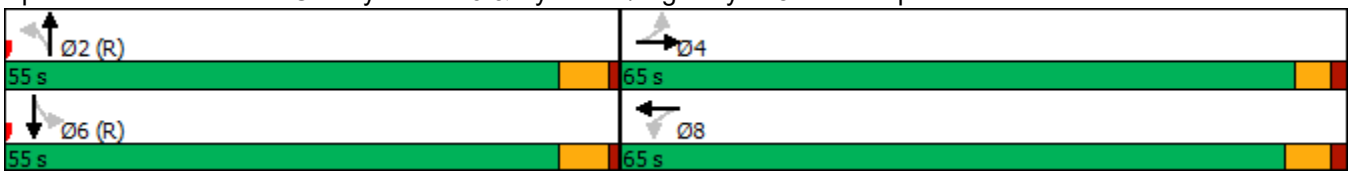
Intersection Summary			
HCM 2000 Control Delay	59.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	115.6	Sum of lost time (s)	14.4
Intersection Capacity Utilization	112.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

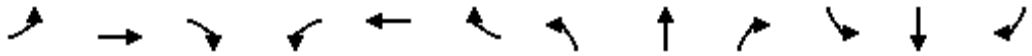
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	6	5	340	15	13	280	102	146
Future Volume (vph)	6	5	340	15	13	280	102	146
Lane Group Flow (vph)	0	49	405	36	0	412	121	180
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	20.0	20.0	20.0	20.0
Minimum Split (s)	39.2	39.2	39.2	39.2	25.6	25.6	25.6	25.6
Total Split (s)	65.0	65.0	65.0	65.0	55.0	55.0	55.0	55.0
Total Split (%)	54.2%	54.2%	54.2%	54.2%	45.8%	45.8%	45.8%	45.8%
Yellow Time (s)	3.3	3.3	4.2	4.2	4.6	4.6	4.6	4.6
All-Red Time (s)	1.6	1.6	1.6	1.6	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		4.9	5.8	5.8		5.6	5.6	5.6
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	C-Max	C-Max	C-Max	C-Max
v/c Ratio		0.07	0.65	0.05		0.65	0.43	0.27
Control Delay		7.0	28.6	9.8		33.4	31.0	24.4
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0
Total Delay		7.0	28.6	9.8		33.4	31.0	24.4
Queue Length 50th (m)		1.6	72.5	2.2		78.9	21.1	28.7
Queue Length 95th (m)		7.2	97.9	7.4		104.3	36.3	42.6
Internal Link Dist (m)		592.7		625.0		491.5		559.6
Turn Bay Length (m)			100.0				82.0	
Base Capacity (vph)		742	626	745		638	284	678
Starvation Cap Reductn		0	0	0		0	0	0
Spillback Cap Reductn		0	0	0		0	0	0
Storage Cap Reductn		0	0	0		0	0	0
Reduced v/c Ratio		0.07	0.65	0.05		0.65	0.43	0.27

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 1: County Road 10 & Syer Line/Highway 115 SB Ramp





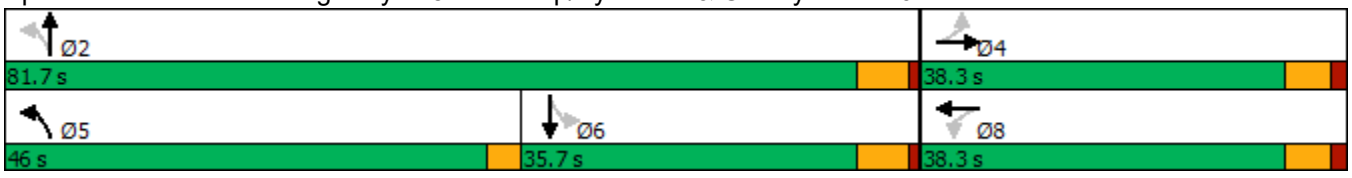
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	5	30	340	15	15	13	280	54	102	146	5
Future Volume (vph)	6	5	30	340	15	15	13	280	54	102	146	5
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.9		5.8	5.8			5.6		5.6	5.6	
Lane Util. Factor		1.00		1.00	1.00			1.00		1.00	1.00	
Frt		0.90		1.00	0.93			0.98		1.00	0.99	
Flt Protected		0.99		0.95	1.00			1.00		0.95	1.00	
Satd. Flow (prot)		1468		1662	1492			1555		1614	1646	
Flt Permitted		0.98		0.73	1.00			0.99		0.41	1.00	
Satd. Flow (perm)		1447		1269	1492			1538		691	1646	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	7	6	36	405	18	18	15	333	64	121	174	6
RTOR Reduction (vph)	0	18	0	0	9	0	0	5	0	0	1	0
Lane Group Flow (vph)	0	31	0	405	27	0	0	407	0	121	179	0
Heavy Vehicles (%)	0%	0%	9%	0%	9%	8%	30%	11%	0%	3%	6%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		60.1		59.2	59.2			49.4		49.4	49.4	
Effective Green, g (s)		60.1		59.2	59.2			49.4		49.4	49.4	
Actuated g/C Ratio		0.50		0.49	0.49			0.41		0.41	0.41	
Clearance Time (s)		4.9		5.8	5.8			5.6		5.6	5.6	
Vehicle Extension (s)		3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		724		626	736			633		284	677	
v/s Ratio Prot					0.02						0.11	
v/s Ratio Perm		0.02		c0.32				c0.26		0.18		
v/c Ratio		0.04		0.65	0.04			0.64		0.43	0.26	
Uniform Delay, d1		15.3		22.6	15.7			28.2		25.2	23.3	
Progression Factor		1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.1		5.1	0.1			5.0		4.6	1.0	
Delay (s)		15.4		27.7	15.8			33.2		29.8	24.3	
Level of Service		B		C	B			C		C	C	
Approach Delay (s)		15.4			26.8			33.2			26.5	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	28.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.4
Intersection Capacity Utilization	78.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	40	0	11	4	609	296	16	474
Future Volume (vph)	40	0	11	4	609	296	16	474
Lane Group Flow (vph)	0	79	0	31	716	356	0	605
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases		4		8	5	2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	20.0	20.0	20.0
Minimum Split (s)	38.3	38.3	38.3	38.3	9.5	28.4	28.4	28.4
Total Split (s)	38.3	38.3	38.3	38.3	46.0	81.7	35.7	35.7
Total Split (%)	31.9%	31.9%	31.9%	31.9%	38.3%	68.1%	29.8%	29.8%
Yellow Time (s)	4.2	4.2	4.2	4.2	3.0	4.6	4.6	4.6
All-Red Time (s)	1.6	1.6	1.6	1.6	0.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0		0.0
Total Lost Time (s)		5.8		5.8	3.0	5.6		5.6
Lead/Lag					Lead		Lag	Lag
Lead-Lag Optimize?					Yes		Yes	Yes
Recall Mode	None	None	None	None	None	Max	Max	Max
v/c Ratio		0.45		0.18	0.79	0.28		0.65
Control Delay		27.4		29.8	19.0	3.6		32.5
Queue Delay		0.0		0.0	0.0	0.0		0.0
Total Delay		27.4		29.8	19.0	3.6		32.5
Queue Length 50th (m)		5.2		3.3	73.2	15.7		54.3
Queue Length 95th (m)		18.0		11.3	121.9	26.6		71.5
Internal Link Dist (m)		658.6		1175.6		599.4		491.5
Turn Bay Length (m)					85.0			
Base Capacity (vph)		434		501	903	1291		934
Starvation Cap Reductn		0		0	0	0		0
Spillback Cap Reductn		0		0	0	0		0
Storage Cap Reductn		0		0	0	0		0
Reduced v/c Ratio		0.18		0.06	0.79	0.28		0.65

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 94.9
Natural Cycle: 120
Control Type: Semi Act-Uncoord

Splits and Phases: 2: Highway 115 NB Ramp/Syer Line & County Road 10



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	0	27	11	4	11	609	296	7	16	474	24
Future Volume (vph)	40	0	27	11	4	11	609	296	7	16	474	24
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		5.8			5.8		3.0	5.6			5.6	
Lane Util. Factor		1.00			1.00		1.00	1.00			0.95	
Frt		0.95			0.94		1.00	1.00			0.99	
Flt Protected		0.97			0.98		0.95	1.00			1.00	
Satd. Flow (prot)		1416			1617		1599	1575			3118	
Flt Permitted		0.80			0.87		0.28	1.00			0.94	
Satd. Flow (perm)		1165			1433		465	1575			2922	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	47	0	32	13	5	13	716	348	8	19	558	28
RTOR Reduction (vph)	0	47	0	0	12	0	0	0	0	0	3	0
Lane Group Flow (vph)	0	32	0	0	19	0	716	356	0	0	602	0
Heavy Vehicles (%)	7%	0%	23%	0%	0%	0%	4%	11%	0%	8%	5%	19%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		8.3			8.3		76.5	76.5			30.3	
Effective Green, g (s)		8.3			8.3		76.5	76.5			30.3	
Actuated g/C Ratio		0.09			0.09		0.80	0.80			0.31	
Clearance Time (s)		5.8			5.8		3.0	5.6			5.6	
Vehicle Extension (s)		3.0			3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		100			123		879	1252			920	
v/s Ratio Prot							c0.37	0.23				
v/s Ratio Perm		c0.03			0.01		c0.28				0.21	
v/c Ratio		0.32			0.16		0.81	0.28			0.65	
Uniform Delay, d1		41.3			40.7		11.9	2.6			28.4	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		1.9			0.6		5.9	0.6			3.6	
Delay (s)		43.2			41.3		17.7	3.2			32.1	
Level of Service		D			D		B	A			C	
Approach Delay (s)		43.2			41.3			12.9			32.1	
Approach LOS		D			D			B			C	

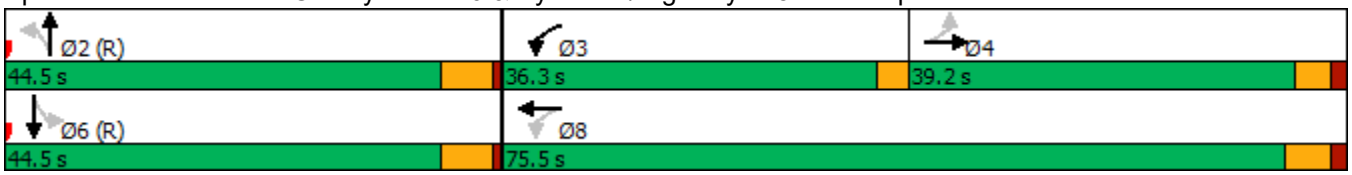
Intersection Summary			
HCM 2000 Control Delay	21.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	96.2	Sum of lost time (s)	14.4
Intersection Capacity Utilization	75.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

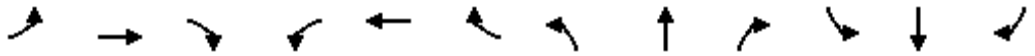
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	21	9	658	28	23	330	69	250
Future Volume (vph)	21	9	658	28	23	330	69	250
Lane Group Flow (vph)	0	68	693	41	0	403	73	276
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases		4	3	8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	5.0	10.0	20.0	20.0	20.0	20.0
Minimum Split (s)	39.2	39.2	9.5	39.2	25.6	25.6	25.6	25.6
Total Split (s)	39.2	39.2	36.3	75.5	44.5	44.5	44.5	44.5
Total Split (%)	32.7%	32.7%	30.3%	62.9%	37.1%	37.1%	37.1%	37.1%
Yellow Time (s)	3.3	3.3	3.0	4.2	4.6	4.6	4.6	4.6
All-Red Time (s)	1.6	1.6	0.0	1.6	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		4.9	3.0	5.8		5.6	5.6	5.6
Lead/Lag	Lag	Lag	Lead					
Lead-Lag Optimize?	Yes	Yes	Yes					
Recall Mode	Max	Max	None	Max	C-Max	C-Max	C-Max	C-Max
v/c Ratio		0.16	0.81	0.05		0.77	0.38	0.52
Control Delay		18.0	25.7	8.5		47.2	38.4	36.9
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0
Total Delay		18.0	25.7	8.5		47.2	38.4	36.9
Queue Length 50th (m)		5.6	109.7	2.9		88.6	13.9	54.9
Queue Length 95th (m)		17.3	155.6	8.0		129.1	29.2	82.9
Internal Link Dist (m)		592.7		625.0		491.5		559.6
Turn Bay Length (m)			100.0				82.0	
Base Capacity (vph)		426	857	907		526	192	534
Starvation Cap Reductn		0	0	0		0	0	0
Spillback Cap Reductn		0	0	0		0	0	0
Storage Cap Reductn		0	0	0		0	0	0
Reduced v/c Ratio		0.16	0.81	0.05		0.77	0.38	0.52

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 1: County Road 10 & Syer Line/Highway 115 SB Ramp





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	9	35	658	28	11	23	330	30	69	250	12
Future Volume (vph)	21	9	35	658	28	11	23	330	30	69	250	12
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.9		3.0	5.8			5.6		5.6	5.6	
Lane Util. Factor		1.00		1.00	1.00			1.00		1.00	1.00	
Frt		0.93		1.00	0.96			0.99		1.00	0.99	
Flt Protected		0.98		0.95	1.00			1.00		0.95	1.00	
Satd. Flow (prot)		1445		1662	1554			1665		1630	1644	
Flt Permitted		0.92		0.69	1.00			0.97		0.35	1.00	
Satd. Flow (perm)		1351		1215	1554			1617		595	1644	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	22	9	37	693	29	12	24	347	32	73	263	13
RTOR Reduction (vph)	0	26	0	0	5	0	0	3	0	0	1	0
Lane Group Flow (vph)	0	42	0	693	36	0	0	400	0	73	275	0
Heavy Vehicles (%)	0%	17%	15%	0%	5%	14%	6%	2%	20%	2%	6%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		35.6		69.7	69.7			38.9		38.9	38.9	
Effective Green, g (s)		35.6		69.7	69.7			38.9		38.9	38.9	
Actuated g/C Ratio		0.30		0.58	0.58			0.32		0.32	0.32	
Clearance Time (s)		4.9		3.0	5.8			5.6		5.6	5.6	
Vehicle Extension (s)		3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		400		824	902			524		192	532	
v/s Ratio Prot				c0.22	0.02						0.17	
v/s Ratio Perm		0.03		c0.26				c0.25		0.12		
v/c Ratio		0.10		0.84	0.04			0.76		0.38	0.52	
Uniform Delay, d1		30.6		18.7	10.8			36.4		31.3	32.9	
Progression Factor		1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.5		7.8	0.1			10.1		5.6	3.6	
Delay (s)		31.2		26.5	10.9			46.6		36.9	36.5	
Level of Service		C		C	B			D		D	D	
Approach Delay (s)		31.2			25.6			46.6			36.6	
Approach LOS		C			C			D			D	

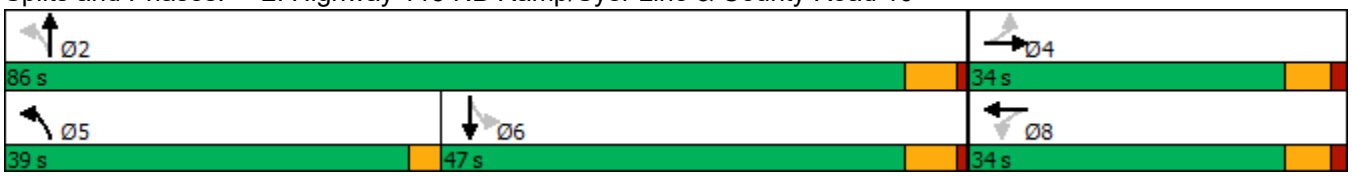
Intersection Summary			
HCM 2000 Control Delay	33.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	97.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

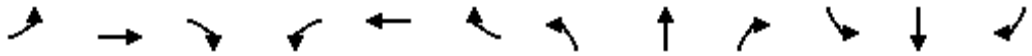
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	143	11	4	6	407	233	11	886
Future Volume (vph)	143	11	4	6	407	233	11	886
Lane Group Flow (vph)	0	226	0	21	428	257	0	989
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases		4		8	5	2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	20.0	20.0	20.0
Minimum Split (s)	33.6	33.6	33.6	33.6	9.5	25.6	25.6	25.6
Total Split (s)	34.0	34.0	34.0	34.0	39.0	86.0	47.0	47.0
Total Split (%)	28.3%	28.3%	28.3%	28.3%	32.5%	71.7%	39.2%	39.2%
Yellow Time (s)	4.2	4.2	4.2	4.2	3.0	4.6	4.6	4.6
All-Red Time (s)	1.6	1.6	1.6	1.6	0.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0		0.0
Total Lost Time (s)		5.8		5.8	3.0	5.6		5.6
Lead/Lag					Lead		Lag	Lag
Lead-Lag Optimize?					Yes		Yes	Yes
Recall Mode	None	None	None	None	None	Max	Max	Max
v/c Ratio		0.85		0.07	0.81	0.22		0.75
Control Delay		68.7		23.9	31.7	7.3		34.8
Queue Delay		0.0		0.0	0.0	0.0		0.0
Total Delay		68.7		23.9	31.7	7.3		34.8
Queue Length 50th (m)		48.8		1.9	61.3	20.6		108.4
Queue Length 95th (m)		#85.5		8.8	101.7	34.1		#167.7
Internal Link Dist (m)		658.6		1175.6		599.4		491.5
Turn Bay Length (m)					85.0			
Base Capacity (vph)		319		383	626	1149		1314
Starvation Cap Reductn		0		0	0	0		0
Spillback Cap Reductn		0		0	0	0		0
Storage Cap Reductn		0		0	0	0		0
Reduced v/c Ratio		0.71		0.05	0.68	0.22		0.75

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 115.3
Natural Cycle: 90
Control Type: Semi Act-Uncoord
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 115 NB Ramp/Syer Line & County Road 10





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	143	11	60	4	6	10	407	233	11	11	886	42
Future Volume (vph)	143	11	60	4	6	10	407	233	11	11	886	42
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		5.8			5.8		3.0	5.6			5.6	
Lane Util. Factor		1.00			1.00		1.00	1.00			0.95	
Frt		0.96			0.93		1.00	0.99			0.99	
Flt Protected		0.97			0.99		0.95	1.00			1.00	
Satd. Flow (prot)		1549			1611		1646	1644			3209	
Flt Permitted		0.79			0.94		0.16	1.00			0.95	
Satd. Flow (perm)		1259			1533		273	1644			3051	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	151	12	63	4	6	11	428	245	12	12	933	44
RTOR Reduction (vph)	0	12	0	0	9	0	0	1	0	0	2	0
Lane Group Flow (vph)	0	214	0	0	12	0	428	256	0	0	987	0
Heavy Vehicles (%)	4%	0%	9%	0%	0%	0%	1%	6%	0%	0%	2%	22%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		23.3			23.3		80.6	80.6			49.7	
Effective Green, g (s)		23.3			23.3		80.6	80.6			49.7	
Actuated g/C Ratio		0.20			0.20		0.70	0.70			0.43	
Clearance Time (s)		5.8			5.8		3.0	5.6			5.6	
Vehicle Extension (s)		3.0			3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		254			309		523	1149			1315	
v/s Ratio Prot							c0.20	0.16				
v/s Ratio Perm		c0.17			0.01		c0.37				0.32	
v/c Ratio		0.84			0.04		0.82	0.22			0.75	
Uniform Delay, d1		44.2			37.0		23.3	6.2			27.6	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		21.6			0.1		9.7	0.4			4.0	
Delay (s)		65.9			37.1		32.9	6.6			31.6	
Level of Service		E			D		C	A			C	
Approach Delay (s)		65.9			37.1			23.1			31.6	
Approach LOS		E			D			C			C	

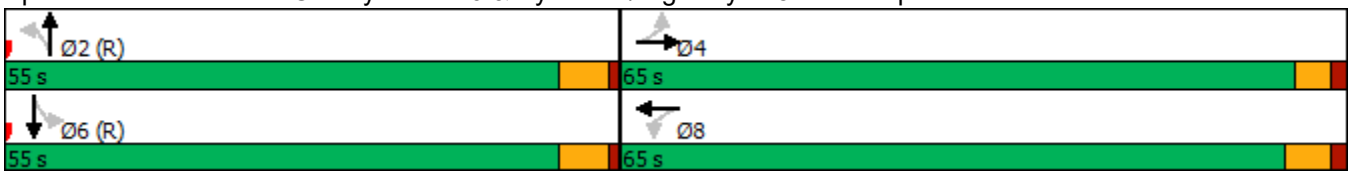
Intersection Summary			
HCM 2000 Control Delay	32.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	115.3	Sum of lost time (s)	14.4
Intersection Capacity Utilization	86.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

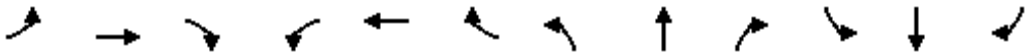
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	7	6	359	17	15	312	114	164
Future Volume (vph)	7	6	359	17	15	312	114	164
Lane Group Flow (vph)	0	55	427	50	0	458	136	201
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	20.0	20.0	20.0	20.0
Minimum Split (s)	39.2	39.2	39.2	39.2	25.6	25.6	25.6	25.6
Total Split (s)	65.0	65.0	65.0	65.0	55.0	55.0	55.0	55.0
Total Split (%)	54.2%	54.2%	54.2%	54.2%	45.8%	45.8%	45.8%	45.8%
Yellow Time (s)	3.3	3.3	4.2	4.2	4.6	4.6	4.6	4.6
All-Red Time (s)	1.6	1.6	1.6	1.6	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		4.9	5.8	5.8		5.6	5.6	5.6
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	C-Max	C-Max	C-Max	C-Max
v/c Ratio		0.07	0.69	0.07		0.72	0.52	0.30
Control Delay		6.8	30.3	8.5		36.7	35.2	24.9
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0
Total Delay		6.8	30.3	8.5		36.7	35.2	24.9
Queue Length 50th (m)		1.8	78.6	2.5		91.8	24.8	32.6
Queue Length 95th (m)		7.8	106.0	8.4		119.9	42.5	47.3
Internal Link Dist (m)		592.7		625.0		491.5		559.6
Turn Bay Length (m)			100.0				82.0	
Base Capacity (vph)		744	622	739		636	262	679
Starvation Cap Reductn		0	0	0		0	0	0
Spillback Cap Reductn		0	0	0		0	0	0
Storage Cap Reductn		0	0	0		0	0	0
Reduced v/c Ratio		0.07	0.69	0.07		0.72	0.52	0.30

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 1: County Road 10 & Syer Line/Highway 115 SB Ramp





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	6	34	359	17	25	15	312	58	114	164	5
Future Volume (vph)	7	6	34	359	17	25	15	312	58	114	164	5
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.9		5.8	5.8			5.6		5.6	5.6	
Lane Util. Factor		1.00		1.00	1.00			1.00		1.00	1.00	
Frt		0.90		1.00	0.91			0.98		1.00	1.00	
Flt Protected		0.99		0.95	1.00			1.00		0.95	1.00	
Satd. Flow (prot)		1471		1662	1469			1554		1614	1646	
Flt Permitted		0.98		0.72	1.00			0.98		0.38	1.00	
Satd. Flow (perm)		1445		1262	1469			1533		638	1646	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	8	7	40	427	20	30	18	371	69	136	195	6
RTOR Reduction (vph)	0	20	0	0	15	0	0	5	0	0	1	0
Lane Group Flow (vph)	0	35	0	427	35	0	0	453	0	136	200	0
Heavy Vehicles (%)	0%	0%	9%	0%	9%	8%	30%	11%	0%	3%	6%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		60.1		59.2	59.2			49.4		49.4	49.4	
Effective Green, g (s)		60.1		59.2	59.2			49.4		49.4	49.4	
Actuated g/C Ratio		0.50		0.49	0.49			0.41		0.41	0.41	
Clearance Time (s)		4.9		5.8	5.8			5.6		5.6	5.6	
Vehicle Extension (s)		3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		723		622	724			631		262	677	
v/s Ratio Prot					0.02						0.12	
v/s Ratio Perm		0.02		c0.34				c0.30		0.21		
v/c Ratio		0.05		0.69	0.05			0.72		0.52	0.30	
Uniform Delay, d1		15.3		23.3	15.8			29.5		26.4	23.6	
Progression Factor		1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.1		6.1	0.1			6.9		7.2	1.1	
Delay (s)		15.4		29.4	15.9			36.3		33.6	24.8	
Level of Service		B		C	B			D		C	C	
Approach Delay (s)		15.4			28.0			36.3			28.3	
Approach LOS		B			C			D			C	

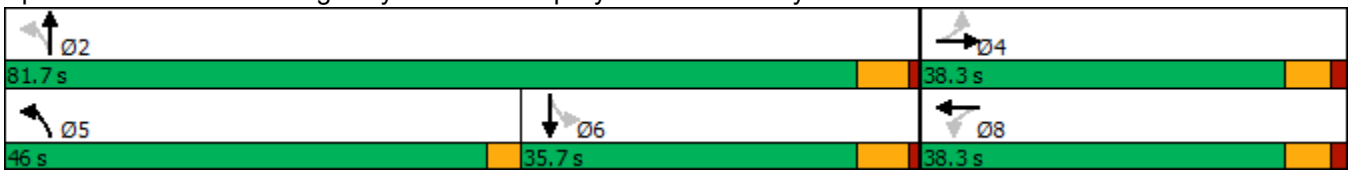
Intersection Summary			
HCM 2000 Control Delay	30.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.4
Intersection Capacity Utilization	81.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	47	1	12	5	632	325	24	499
Future Volume (vph)	47	1	12	5	632	325	24	499
Lane Group Flow (vph)	0	90	0	35	744	393	0	648
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases		4		8	5	2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	20.0	20.0	20.0
Minimum Split (s)	38.3	38.3	38.3	38.3	9.5	28.4	28.4	28.4
Total Split (s)	38.3	38.3	38.3	38.3	46.0	81.7	35.7	35.7
Total Split (%)	31.9%	31.9%	31.9%	31.9%	38.3%	68.1%	29.8%	29.8%
Yellow Time (s)	4.2	4.2	4.2	4.2	3.0	4.6	4.6	4.6
All-Red Time (s)	1.6	1.6	1.6	1.6	0.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0		0.0
Total Lost Time (s)		5.8		5.8	3.0	5.6		5.6
Lead/Lag					Lead		Lag	Lag
Lead-Lag Optimize?					Yes		Yes	Yes
Recall Mode	None	None	None	None	None	Max	Max	Max
v/c Ratio		0.54		0.18	0.85	0.31		0.72
Control Delay		43.0		28.3	26.0	4.4		35.7
Queue Delay		0.0		0.0	0.0	0.0		0.0
Total Delay		43.0		28.3	26.0	4.4		35.7
Queue Length 50th (m)		12.5		3.7	91.1	18.6		60.4
Queue Length 95th (m)		26.8		11.9	#171.5	35.8		82.1
Internal Link Dist (m)		658.6		1175.6		599.4		491.5
Turn Bay Length (m)					85.0			
Base Capacity (vph)		412		493	871	1273		905
Starvation Cap Reductn		0		0	0	0		0
Spillback Cap Reductn		0		0	0	0		0
Storage Cap Reductn		0		0	0	0		0
Reduced v/c Ratio		0.22		0.07	0.85	0.31		0.72

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 96.5
Natural Cycle: 130
Control Type: Semi Act-Uncoord
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 115 NB Ramp/Syer Line & County Road 10



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	1	29	12	5	13	632	325	9	24	499	28
Future Volume (vph)	47	1	29	12	5	13	632	325	9	24	499	28
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		5.8			5.8		3.0	5.6			5.6	
Lane Util. Factor		1.00			1.00		1.00	1.00			0.95	
Frt		0.95			0.94		1.00	1.00			0.99	
Flt Protected		0.97			0.98		0.95	1.00			1.00	
Satd. Flow (prot)		1427			1616		1599	1574			3111	
Flt Permitted		0.79			0.86		0.25	1.00			0.92	
Satd. Flow (perm)		1165			1424		413	1574			2873	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	55	1	34	14	6	15	744	382	11	28	587	33
RTOR Reduction (vph)	0	23	0	0	14	0	0	0	0	0	3	0
Lane Group Flow (vph)	0	67	0	0	21	0	744	393	0	0	645	0
Heavy Vehicles (%)	7%	0%	23%	0%	0%	0%	4%	11%	0%	8%	5%	19%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		9.7			9.7		76.6	76.6			30.3	
Effective Green, g (s)		9.7			9.7		76.6	76.6			30.3	
Actuated g/C Ratio		0.10			0.10		0.78	0.78			0.31	
Clearance Time (s)		5.8			5.8		3.0	5.6			5.6	
Vehicle Extension (s)		3.0			3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		115			141		849	1234			891	
v/s Ratio Prot							c0.39	0.25				
v/s Ratio Perm		c0.06			0.02		c0.30				0.22	
v/c Ratio		0.59			0.15		0.88	0.32			0.72	
Uniform Delay, d1		42.1			40.2		15.0	3.0			30.0	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		7.4			0.5		10.1	0.7			5.1	
Delay (s)		49.5			40.7		25.1	3.7			35.1	
Level of Service		D			D		C	A			D	
Approach Delay (s)		49.5			40.7			17.7			35.1	
Approach LOS		D			D			B			D	

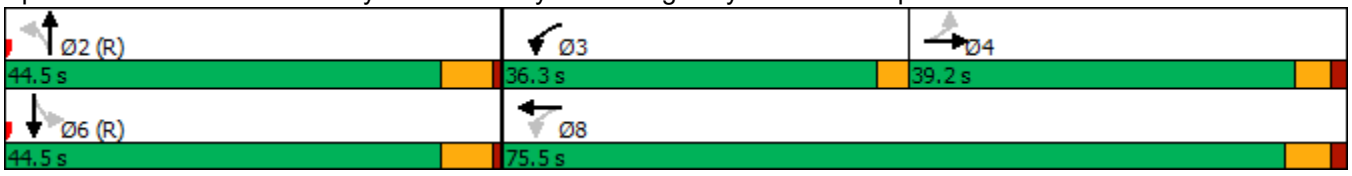
Intersection Summary			
HCM 2000 Control Delay	25.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	97.7	Sum of lost time (s)	14.4
Intersection Capacity Utilization	77.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

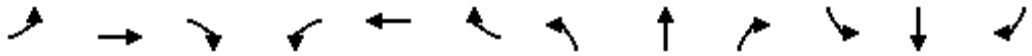
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	23	10	686	31	26	364	79	284
Future Volume (vph)	23	10	686	31	26	364	79	284
Lane Group Flow (vph)	0	76	722	48	0	445	83	313
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases		4	3	8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	5.0	10.0	20.0	20.0	20.0	20.0
Minimum Split (s)	39.2	39.2	9.5	39.2	25.6	25.6	25.6	25.6
Total Split (s)	39.2	39.2	36.3	75.5	44.5	44.5	44.5	44.5
Total Split (%)	32.7%	32.7%	30.3%	62.9%	37.1%	37.1%	37.1%	37.1%
Yellow Time (s)	3.3	3.3	3.0	4.2	4.6	4.6	4.6	4.6
All-Red Time (s)	1.6	1.6	0.0	1.6	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		4.9	3.0	5.8		5.6	5.6	5.6
Lead/Lag	Lag	Lag	Lead					
Lead-Lag Optimize?	Yes	Yes	Yes					
Recall Mode	Max	Max	None	Max	C-Max	C-Max	C-Max	C-Max
v/c Ratio		0.18	0.85	0.05		0.85	0.48	0.59
Control Delay		18.0	28.7	8.3		54.0	43.4	39.0
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0
Total Delay		18.0	28.7	8.3		54.0	43.4	39.0
Queue Length 50th (m)		6.4	117.9	3.3		101.6	16.4	64.1
Queue Length 95th (m)		19.0	#176.0	8.8		#159.4	34.4	95.2
Internal Link Dist (m)		592.7		625.0		491.5		559.6
Turn Bay Length (m)			100.0				82.0	
Base Capacity (vph)		422	850	904		524	174	534
Starvation Cap Reductn		0	0	0		0	0	0
Spillback Cap Reductn		0	0	0		0	0	0
Storage Cap Reductn		0	0	0		0	0	0
Reduced v/c Ratio		0.18	0.85	0.05		0.85	0.48	0.59

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: County Road 10 & Syer Line/Highway 115 SB Ramp





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	10	39	686	31	14	26	364	33	79	284	13
Future Volume (vph)	23	10	39	686	31	14	26	364	33	79	284	13
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.9		3.0	5.8			5.6		5.6	5.6	
Lane Util. Factor		1.00		1.00	1.00			1.00		1.00	1.00	
Frt		0.93		1.00	0.95			0.99		1.00	0.99	
Flt Protected		0.98		0.95	1.00			1.00		0.95	1.00	
Satd. Flow (prot)		1445		1662	1547			1665		1630	1644	
Flt Permitted		0.92		0.68	1.00			0.96		0.31	1.00	
Satd. Flow (perm)		1347		1192	1547			1610		539	1644	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	24	11	41	722	33	15	27	383	35	83	299	14
RTOR Reduction (vph)	0	29	0	0	6	0	0	3	0	0	1	0
Lane Group Flow (vph)	0	47	0	722	42	0	0	442	0	83	312	0
Heavy Vehicles (%)	0%	17%	15%	0%	5%	14%	6%	2%	20%	2%	6%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		35.1		69.7	69.7			38.9		38.9	38.9	
Effective Green, g (s)		35.1		69.7	69.7			38.9		38.9	38.9	
Actuated g/C Ratio		0.29		0.58	0.58			0.32		0.32	0.32	
Clearance Time (s)		4.9		3.0	5.8			5.6		5.6	5.6	
Vehicle Extension (s)		3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		393		819	898			521		174	532	
v/s Ratio Prot				c0.24	0.03						0.19	
v/s Ratio Perm		0.03		c0.27				c0.27		0.15		
v/c Ratio		0.12		0.88	0.05			0.85		0.48	0.59	
Uniform Delay, d1		31.1		19.6	10.8			37.8		32.4	33.8	
Progression Factor		1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.6		11.0	0.1			15.8		9.1	4.7	
Delay (s)		31.7		30.6	10.9			53.6		41.5	38.5	
Level of Service		C		C	B			D		D	D	
Approach Delay (s)		31.7			29.4			53.6			39.1	
Approach LOS		C			C			D			D	

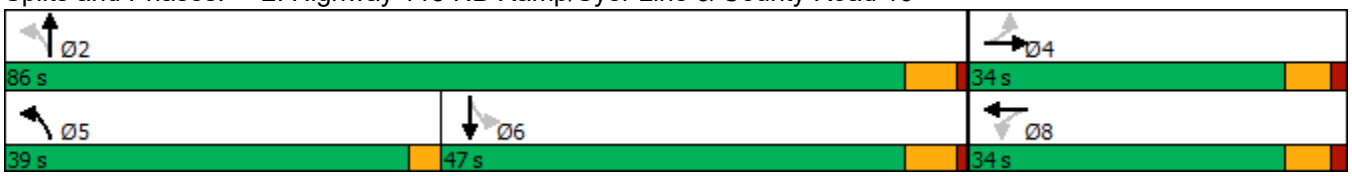
Intersection Summary			
HCM 2000 Control Delay	38.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	103.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

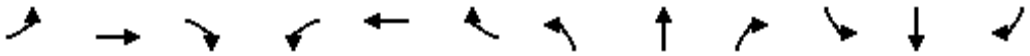
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	160	13	5	11	419	255	13	933
Future Volume (vph)	160	13	5	11	419	255	13	933
Lane Group Flow (vph)	0	250	0	32	441	281	0	1053
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases		4		8	5	2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	20.0	20.0	20.0
Minimum Split (s)	33.6	33.6	33.6	33.6	9.5	25.6	25.6	25.6
Total Split (s)	34.0	34.0	34.0	34.0	39.0	86.0	47.0	47.0
Total Split (%)	28.3%	28.3%	28.3%	28.3%	32.5%	71.7%	39.2%	39.2%
Yellow Time (s)	4.2	4.2	4.2	4.2	3.0	4.6	4.6	4.6
All-Red Time (s)	1.6	1.6	1.6	1.6	0.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0		0.0
Total Lost Time (s)		5.8		5.8	3.0	5.6		5.6
Lead/Lag					Lead		Lag	Lag
Lead-Lag Optimize?					Yes		Yes	Yes
Recall Mode	None	None	None	None	None	Max	Max	Max
v/c Ratio		0.89		0.09	0.86	0.25		0.85
Control Delay		74.5		23.7	42.5	7.9		41.4
Queue Delay		0.0		0.0	0.0	0.0		0.0
Total Delay		74.5		23.7	42.5	7.9		41.4
Queue Length 50th (m)		55.8		3.3	77.1	24.9		129.7
Queue Length 95th (m)		#100.8		11.9	116.8	37.6		#186.3
Internal Link Dist (m)		658.6		1175.6		599.4		491.5
Turn Bay Length (m)					85.0			
Base Capacity (vph)		312		385	590	1130		1238
Starvation Cap Reductn		0		0	0	0		0
Spillback Cap Reductn		0		0	0	0		0
Storage Cap Reductn		0		0	0	0		0
Reduced v/c Ratio		0.80		0.08	0.75	0.25		0.85

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 117.2
Natural Cycle: 100
Control Type: Semi Act-Uncoord
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 115 NB Ramp/Syer Line & County Road 10





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	160	13	65	5	11	14	419	255	12	13	933	54
Future Volume (vph)	160	13	65	5	11	14	419	255	12	13	933	54
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		5.8			5.8		3.0	5.6			5.6	
Lane Util. Factor		1.00			1.00		1.00	1.00			0.95	
Frt		0.96			0.94		1.00	0.99			0.99	
Flt Protected		0.97			0.99		0.95	1.00			1.00	
Satd. Flow (prot)		1551			1627		1646	1644			3198	
Flt Permitted		0.78			0.95		0.12	1.00			0.95	
Satd. Flow (perm)		1248			1555		208	1644			3037	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	168	14	68	5	12	15	441	268	13	14	982	57
RTOR Reduction (vph)	0	12	0	0	12	0	0	1	0	0	3	0
Lane Group Flow (vph)	0	238	0	0	20	0	441	280	0	0	1050	0
Heavy Vehicles (%)	4%	0%	9%	0%	0%	0%	1%	6%	0%	0%	2%	22%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		25.2			25.2		80.5	80.5			47.7	
Effective Green, g (s)		25.2			25.2		80.5	80.5			47.7	
Actuated g/C Ratio		0.22			0.22		0.69	0.69			0.41	
Clearance Time (s)		5.8			5.8		3.0	5.6			5.6	
Vehicle Extension (s)		3.0			3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		268			334		508	1130			1237	
v/s Ratio Prot							c0.22	0.17				
v/s Ratio Perm		c0.19			0.01		c0.37				0.35	
v/c Ratio		0.89			0.06		0.87	0.25			0.85	
Uniform Delay, d1		44.6			36.5		29.0	6.9			31.4	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		27.9			0.1		14.5	0.5			7.4	
Delay (s)		72.5			36.6		43.6	7.4			38.8	
Level of Service		E			D		D	A			D	
Approach Delay (s)		72.5			36.6			29.5			38.8	
Approach LOS		E			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	39.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	117.1	Sum of lost time (s)	14.4
Intersection Capacity Utilization	91.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

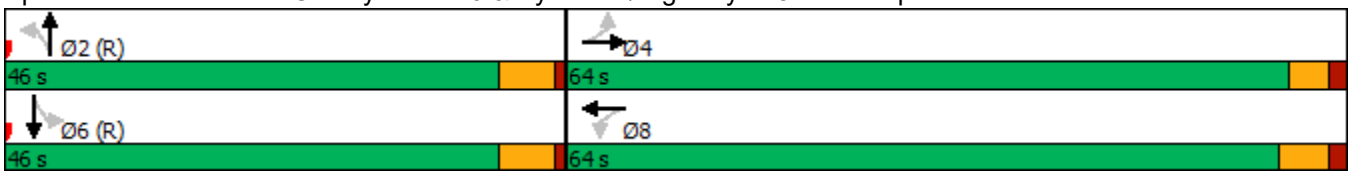
Appendix F –
Synchro Analysis Output –
Total Traffic Volumes

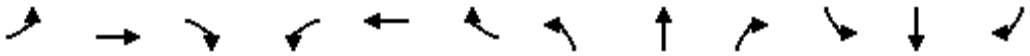
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	6	5	340	15	13	280	102	146
Future Volume (vph)	6	5	340	15	13	280	102	146
Lane Group Flow (vph)	0	49	0	441	0	412	121	180
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	20.0	20.0	20.0	20.0
Minimum Split (s)	39.2	39.2	39.2	39.2	25.6	25.6	25.6	25.6
Total Split (s)	64.0	64.0	64.0	64.0	46.0	46.0	46.0	46.0
Total Split (%)	58.2%	58.2%	58.2%	58.2%	41.8%	41.8%	41.8%	41.8%
Yellow Time (s)	3.3	3.3	4.2	4.2	4.6	4.6	4.6	4.6
All-Red Time (s)	1.6	1.6	1.6	1.6	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)		4.9		5.8		5.6	5.6	5.6
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	C-Max	C-Max	C-Max	C-Max
v/c Ratio		0.06		0.68		0.72	0.51	0.30
Control Delay		5.6		25.6		37.8	36.5	26.1
Queue Delay		0.0		0.0		0.0	0.0	0.0
Total Delay		5.6		25.6		37.8	36.5	26.1
Queue Length 50th (m)		1.3		69.7		77.4	21.1	28.2
Queue Length 95th (m)		6.4		96.9		104.7	37.8	42.7
Internal Link Dist (m)		592.7		625.0		491.5		559.6
Turn Bay Length (m)							82.0	
Base Capacity (vph)		769		648		570	236	605
Starvation Cap Reductn		0		0		0	0	0
Spillback Cap Reductn		0		0		0	0	0
Storage Cap Reductn		0		0		0	0	0
Reduced v/c Ratio		0.06		0.68		0.72	0.51	0.30

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 1: County Road 10 & Syer Line/Highway 115 SB Ramp





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	5	30	340	15	15	13	280	54	102	146	5
Future Volume (vph)	6	5	30	340	15	15	13	280	54	102	146	5
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.9			5.8			5.6		5.6	5.6	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frt		0.90			0.99			0.98		1.00	0.99	
Flt Protected		0.99			0.96			1.00		0.95	1.00	
Satd. Flow (prot)		1468			1652			1555		1614	1646	
Flt Permitted		0.95			0.71			0.99		0.38	1.00	
Satd. Flow (perm)		1402			1224			1538		643	1646	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	7	6	36	405	18	18	15	333	64	121	174	6
RTOR Reduction (vph)	0	17	0	0	1	0	0	6	0	0	1	0
Lane Group Flow (vph)	0	32	0	0	440	0	0	406	0	121	179	0
Heavy Vehicles (%)	0%	0%	9%	0%	9%	8%	30%	11%	0%	3%	6%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		59.1			58.2			40.4		40.4	40.4	
Effective Green, g (s)		59.1			58.2			40.4		40.4	40.4	
Actuated g/C Ratio		0.54			0.53			0.37		0.37	0.37	
Clearance Time (s)		4.9			5.8			5.6		5.6	5.6	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		753			647			564		236	604	
v/s Ratio Prot											0.11	
v/s Ratio Perm		0.02			c0.36			c0.26		0.19		
v/c Ratio		0.04			0.68			0.72		0.51	0.30	
Uniform Delay, d1		12.1			19.0			29.9		27.1	24.7	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.1			5.7			7.7		7.8	1.2	
Delay (s)		12.2			24.7			37.6		34.9	26.0	
Level of Service		B			C			D		C	C	
Approach Delay (s)		12.2			24.7			37.6			29.5	
Approach LOS		B			C			D			C	

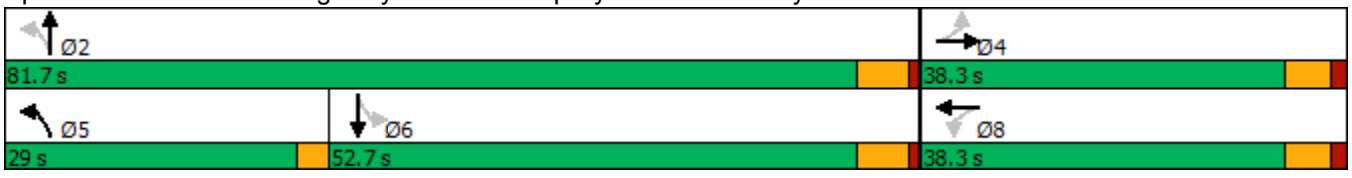
Intersection Summary			
HCM 2000 Control Delay	29.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	11.4
Intersection Capacity Utilization	80.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	40	0	11	4	609	296	16	474
Future Volume (vph)	40	0	11	4	609	296	16	474
Lane Group Flow (vph)	0	79	0	31	716	356	0	605
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases		4		8	5	2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	20.0	20.0	20.0
Minimum Split (s)	38.3	38.3	38.3	38.3	9.5	28.4	28.4	28.4
Total Split (s)	38.3	38.3	38.3	38.3	29.0	81.7	52.7	52.7
Total Split (%)	31.9%	31.9%	31.9%	31.9%	24.2%	68.1%	43.9%	43.9%
Yellow Time (s)	4.2	4.2	4.2	4.2	3.0	4.6	4.6	4.6
All-Red Time (s)	1.6	1.6	1.6	1.6	0.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0		0.0
Total Lost Time (s)		5.8		5.8	3.0	5.6		5.6
Lead/Lag					Lead		Lag	Lag
Lead-Lag Optimize?					Yes		Yes	Yes
Recall Mode	None	None	None	None	None	Max	Max	Max
v/c Ratio		0.45		0.18	0.95	0.28		0.75
Control Delay		27.4		29.8	36.7	3.6		27.6
Queue Delay		0.0		0.0	0.0	0.0		0.0
Total Delay		27.4		29.8	36.7	3.6		27.6
Queue Length 50th (m)		5.2		3.3	71.1	15.7		95.0
Queue Length 95th (m)		18.0		11.3	#104.4	26.6		136.3
Internal Link Dist (m)		658.6		1175.6		599.4		491.5
Turn Bay Length (m)					85.0			
Base Capacity (vph)		434		501	750	1291		807
Starvation Cap Reductn		0		0	0	0		0
Spillback Cap Reductn		0		0	0	0		0
Storage Cap Reductn		0		0	0	0		0
Reduced v/c Ratio		0.18		0.06	0.95	0.28		0.75

Intersection Summary

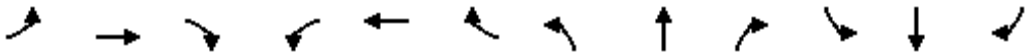
Cycle Length: 120
Actuated Cycle Length: 94.9
Natural Cycle: 150
Control Type: Semi Act-Uncoord
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 115 NB Ramp/Syer Line & County Road 10



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	0	27	11	4	11	609	296	7	16	474	24
Future Volume (vph)	40	0	27	11	4	11	609	296	7	16	474	24
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		5.8			5.8		3.0	5.6			5.6	
Lane Util. Factor		1.00			1.00		1.00	1.00			1.00	
Frt		0.95			0.94		1.00	1.00			0.99	
Flt Protected		0.97			0.98		0.95	1.00			1.00	
Satd. Flow (prot)		1416			1617		1599	1575			1642	
Flt Permitted		0.80			0.87		0.33	1.00			0.98	
Satd. Flow (perm)		1165			1433		555	1575			1617	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	47	0	32	13	5	13	716	348	8	19	558	28
RTOR Reduction (vph)	0	47	0	0	12	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	32	0	0	19	0	716	356	0	0	604	0
Heavy Vehicles (%)	7%	0%	23%	0%	0%	0%	4%	11%	0%	8%	5%	19%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		8.3			8.3		76.5	76.5			47.4	
Effective Green, g (s)		8.3			8.3		76.5	76.5			47.4	
Actuated g/C Ratio		0.09			0.09		0.80	0.80			0.49	
Clearance Time (s)		5.8			5.8		3.0	5.6			5.6	
Vehicle Extension (s)		3.0			3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		100			123		724	1252			796	
v/s Ratio Prot							c0.27	0.23				
v/s Ratio Perm		c0.03			0.01		c0.52				0.37	
v/c Ratio		0.32			0.16		0.99	0.28			0.76	
Uniform Delay, d1		41.3			40.7		14.9	2.6			19.8	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		1.9			0.6		30.3	0.6			6.7	
Delay (s)		43.2			41.3		45.3	3.2			26.5	
Level of Service		D			D		D	A			C	
Approach Delay (s)		43.2			41.3			31.3			26.5	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	30.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	96.2	Sum of lost time (s)	14.4
Intersection Capacity Utilization	88.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	22	1	0	24	0	1	0	0	0	0	0
Future Volume (Veh/h)	0	22	1	0	24	0	1	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
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	24	1	0	26	0	1	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	26			25			50	50	24	50	51	26
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	26			25			50	50	24	50	51	26
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	100	100	100
cM capacity (veh/h)	1588			1603			954	845	1058	949	844	1050

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	25	26	1	0
Volume Left	0	0	1	0
Volume Right	1	0	0	0
cSH	1588	1603	954	1700
Volume to Capacity	0.00	0.00	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	8.8	0.0
Lane LOS			A	A
Approach Delay (s)	0.0	0.0	8.8	0.0
Approach LOS			A	A

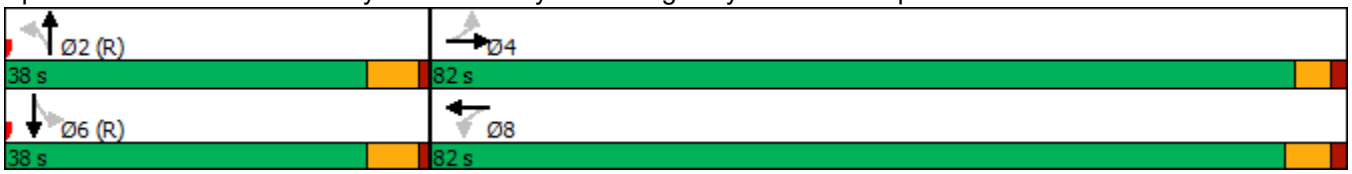
Intersection Summary				
Average Delay	0.2			
Intersection Capacity Utilization	13.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	19	8	596	25	21	315	60	227
Future Volume (vph)	19	8	596	25	21	315	60	227
Lane Group Flow (vph)	0	62	0	662	0	390	63	251
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	20.0	20.0	20.0	20.0
Minimum Split (s)	39.2	39.2	39.2	39.2	25.6	25.6	25.6	25.6
Total Split (s)	82.0	82.0	82.0	82.0	38.0	38.0	38.0	38.0
Total Split (%)	68.3%	68.3%	68.3%	68.3%	31.7%	31.7%	31.7%	31.7%
Yellow Time (s)	3.3	3.3	4.2	4.2	4.6	4.6	4.6	4.6
All-Red Time (s)	1.6	1.6	1.6	1.6	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0	0.0	0.0
Total Lost Time (s)		4.9		5.8		5.6	5.6	5.6
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	C-Max	C-Max	C-Max	C-Max
v/c Ratio		0.08		0.87		0.89	0.47	0.56
Control Delay		4.6		31.9		64.9	50.0	43.2
Queue Delay		0.0		0.0		0.0	0.0	0.0
Total Delay		4.6		31.9		64.9	50.0	43.2
Queue Length 50th (m)		2.4		123.4		92.2	13.1	53.3
Queue Length 95th (m)		7.6		#218.2		#150.2	29.3	81.6
Internal Link Dist (m)		592.7		625.0		491.5		559.6
Turn Bay Length (m)							82.0	
Base Capacity (vph)		772		764		439	135	445
Starvation Cap Reductn		0		0		0	0	0
Spillback Cap Reductn		0		0		0	0	0
Storage Cap Reductn		0		0		0	0	0
Reduced v/c Ratio		0.08		0.87		0.89	0.47	0.56

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: County Road 10 & Syer Line/Highway 115 SB Ramp



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	8	32	596	25	9	21	315	34	60	227	11
Future Volume (vph)	19	8	32	596	25	9	21	315	34	60	227	11
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.9			5.8			5.6		5.6	5.6	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frt		0.93			1.00			0.99		1.00	0.99	
Flt Protected		0.98			0.95			1.00		0.95	1.00	
Satd. Flow (prot)		1444			1661			1659		1630	1644	
Flt Permitted		0.81			0.69			0.97		0.29	1.00	
Satd. Flow (perm)		1182			1204			1615		501	1644	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	20	8	34	627	26	9	22	332	36	63	239	12
RTOR Reduction (vph)	0	12	0	0	0	0	0	3	0	0	1	0
Lane Group Flow (vph)	0	50	0	0	662	0	0	387	0	63	250	0
Heavy Vehicles (%)	0%	17%	15%	0%	5%	14%	6%	2%	20%	2%	6%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		77.1			76.2			32.4		32.4	32.4	
Effective Green, g (s)		77.1			76.2			32.4		32.4	32.4	
Actuated g/C Ratio		0.64			0.64			0.27		0.27	0.27	
Clearance Time (s)		4.9			5.8			5.6		5.6	5.6	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		759			764			436		135	443	
v/s Ratio Prot											0.15	
v/s Ratio Perm		0.04			c0.55			c0.24		0.13		
v/c Ratio		0.07			0.87			0.89		0.47	0.56	
Uniform Delay, d1		8.0			17.8			42.1		36.6	37.7	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.2			12.6			22.6		11.1	5.1	
Delay (s)		8.2			30.4			64.6		47.7	42.8	
Level of Service		A			C			E		D	D	
Approach Delay (s)		8.2			30.4			64.6			43.8	
Approach LOS		A			C			E			D	

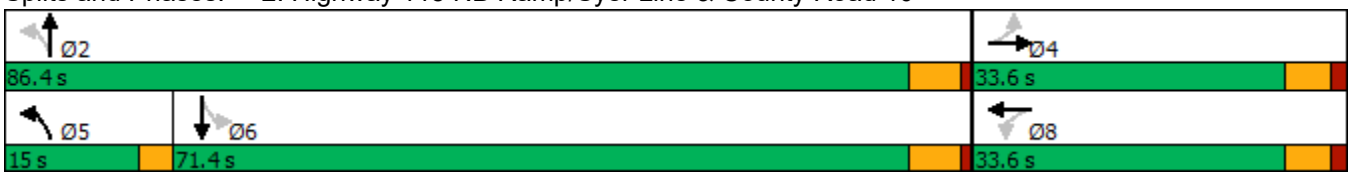
Intersection Summary			
HCM 2000 Control Delay	41.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.4
Intersection Capacity Utilization	93.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

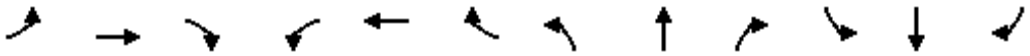
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	128	12	11	38	376	213	24	795
Future Volume (vph)	128	12	11	38	376	213	24	795
Lane Group Flow (vph)	0	205	0	85	396	237	0	898
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases		4		8	5	2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	20.0	20.0	20.0
Minimum Split (s)	33.6	33.6	33.6	33.6	9.5	25.6	25.6	25.6
Total Split (s)	33.6	33.6	33.6	33.6	15.0	86.4	71.4	71.4
Total Split (%)	28.0%	28.0%	28.0%	28.0%	12.5%	72.0%	59.5%	59.5%
Yellow Time (s)	4.2	4.2	4.2	4.2	3.0	4.6	4.6	4.6
All-Red Time (s)	1.6	1.6	1.6	1.6	0.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0		0.0
Total Lost Time (s)		5.8		5.8	3.0	5.6		5.6
Lead/Lag					Lead		Lag	Lag
Lead-Lag Optimize?					Yes		Yes	Yes
Recall Mode	None	None	None	None	None	Max	Max	Max
v/c Ratio		0.83		0.26	0.88	0.20		0.93
Control Delay		67.5		29.6	31.5	6.8		40.8
Queue Delay		0.0		0.0	0.0	0.0		0.0
Total Delay		67.5		29.6	31.5	6.8		40.8
Queue Length 50th (m)		43.5		12.0	30.6	17.4		189.2
Queue Length 95th (m)		#76.4		26.4	#80.9	30.9		#306.0
Internal Link Dist (m)		658.6		1175.6		599.4		491.5
Turn Bay Length (m)					85.0			
Base Capacity (vph)		308		402	448	1162		964
Starvation Cap Reductn		0		0	0	0		0
Spillback Cap Reductn		0		0	0	0		0
Storage Cap Reductn		0		0	0	0		0
Reduced v/c Ratio		0.67		0.21	0.88	0.20		0.93

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 114.6
Natural Cycle: 120
Control Type: Semi Act-Uncoord
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

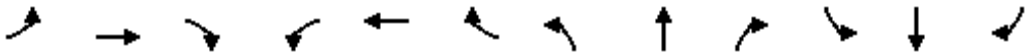
Splits and Phases: 2: Highway 115 NB Ramp/Syer Line & County Road 10





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	128	12	54	11	38	31	376	213	12	24	795	34
Future Volume (vph)	128	12	54	11	38	31	376	213	12	24	795	34
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		5.8			5.8		3.0	5.6			5.6	
Lane Util. Factor		1.00			1.00		1.00	1.00			1.00	
Frt		0.96			0.95		1.00	0.99			0.99	
Flt Protected		0.97			0.99		0.95	1.00			1.00	
Satd. Flow (prot)		1551			1647		1646	1642			1692	
Flt Permitted		0.76			0.95		0.25	1.00			0.99	
Satd. Flow (perm)		1220			1576		441	1642			1672	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	135	13	57	12	40	33	396	224	13	25	837	36
RTOR Reduction (vph)	0	12	0	0	20	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	193	0	0	65	0	396	236	0	0	897	0
Heavy Vehicles (%)	4%	0%	9%	0%	0%	0%	1%	6%	0%	0%	2%	22%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		22.1			22.1		81.0	81.0			66.0	
Effective Green, g (s)		22.1			22.1		81.0	81.0			66.0	
Actuated g/C Ratio		0.19			0.19		0.71	0.71			0.58	
Clearance Time (s)		5.8			5.8		3.0	5.6			5.6	
Vehicle Extension (s)		3.0			3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		235			304		438	1161			963	
v/s Ratio Prot							c0.09	0.14				
v/s Ratio Perm		c0.16			0.04		c0.54				0.54	
v/c Ratio		0.82			0.21		0.90	0.20			0.93	
Uniform Delay, d1		44.3			38.9		12.2	5.7			22.2	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		20.0			0.4		21.7	0.4			16.5	
Delay (s)		64.3			39.2		33.9	6.1			38.7	
Level of Service		E			D		C	A			D	
Approach Delay (s)		64.3			39.2			23.5			38.7	
Approach LOS		E			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	36.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	114.5	Sum of lost time (s)	14.4
Intersection Capacity Utilization	104.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	29	1	0	17	0	1	0	0	0	0	62
Future Volume (Veh/h)	18	29	1	0	17	0	1	0	0	0	0	62
Sign Control		Free			Free			Stop			Stop	
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)	20	32	1	0	18	0	1	0	0	0	0	67
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	18			33			158	90	32	90	91	18
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	18			33			158	90	32	90	91	18
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	100	100	100	100	94
cM capacity (veh/h)	1599			1592			754	793	1047	885	793	1061

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	53	18	1	67
Volume Left	20	0	1	0
Volume Right	1	0	0	67
cSH	1599	1592	754	1061
Volume to Capacity	0.01	0.00	0.00	0.06
Queue Length 95th (m)	0.3	0.0	0.0	1.6
Control Delay (s)	2.8	0.0	9.8	8.6
Lane LOS	A		A	A
Approach Delay (s)	2.8	0.0	9.8	8.6
Approach LOS			A	A

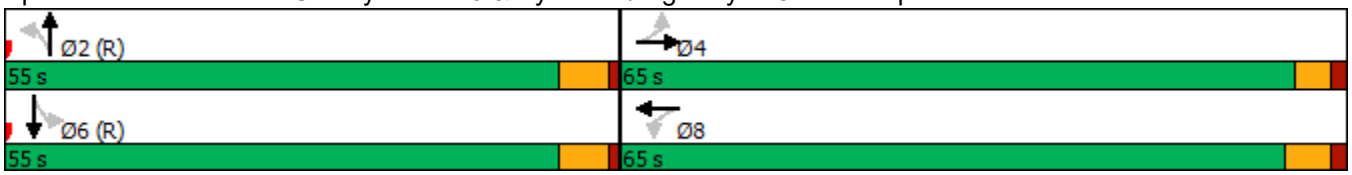
Intersection Summary			
Average Delay	5.3		
Intersection Capacity Utilization	20.3%	ICU Level of Service	A
Analysis Period (min)	15		

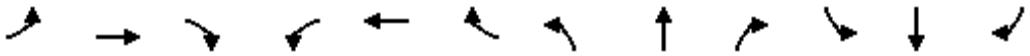
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	6	5	378	15	13	284	102	165
Future Volume (vph)	6	5	378	15	13	284	102	165
Lane Group Flow (vph)	0	49	450	36	0	418	121	202
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	20.0	20.0	20.0	20.0
Minimum Split (s)	39.2	39.2	39.2	39.2	25.6	25.6	25.6	25.6
Total Split (s)	65.0	65.0	65.0	65.0	55.0	55.0	55.0	55.0
Total Split (%)	54.2%	54.2%	54.2%	54.2%	45.8%	45.8%	45.8%	45.8%
Yellow Time (s)	3.3	3.3	4.2	4.2	4.6	4.6	4.6	4.6
All-Red Time (s)	1.6	1.6	1.6	1.6	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		4.9	5.8	5.8		5.6	5.6	5.6
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	C-Max	C-Max	C-Max	C-Max
v/c Ratio		0.07	0.72	0.05		0.66	0.43	0.30
Control Delay		7.0	31.9	9.8		33.7	31.3	24.9
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0
Total Delay		7.0	31.9	9.8		33.7	31.3	24.9
Queue Length 50th (m)		1.6	85.0	2.2		80.5	21.1	32.7
Queue Length 95th (m)		7.2	113.8	7.4		106.3	36.5	47.4
Internal Link Dist (m)		592.7		625.0		491.5		559.6
Turn Bay Length (m)			100.0				82.0	
Base Capacity (vph)		742	626	745		638	281	679
Starvation Cap Reductn		0	0	0		0	0	0
Spillback Cap Reductn		0	0	0		0	0	0
Storage Cap Reductn		0	0	0		0	0	0
Reduced v/c Ratio		0.07	0.72	0.05		0.66	0.43	0.30

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 1: County Road 10 & Syer Line/Highway 115 SB Ramp





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	5	30	378	15	15	13	284	55	102	165	5
Future Volume (vph)	6	5	30	378	15	15	13	284	55	102	165	5
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.9		5.8	5.8			5.6		5.6	5.6	
Lane Util. Factor		1.00		1.00	1.00			1.00		1.00	1.00	
Frt		0.90		1.00	0.93			0.98		1.00	1.00	
Flt Protected		0.99		0.95	1.00			1.00		0.95	1.00	
Satd. Flow (prot)		1468		1662	1492			1555		1614	1646	
Flt Permitted		0.98		0.73	1.00			0.99		0.40	1.00	
Satd. Flow (perm)		1447		1269	1492			1537		684	1646	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	7	6	36	450	18	18	15	338	65	121	196	6
RTOR Reduction (vph)	0	18	0	0	9	0	0	5	0	0	1	0
Lane Group Flow (vph)	0	31	0	450	27	0	0	413	0	121	201	0
Heavy Vehicles (%)	0%	0%	9%	0%	9%	8%	30%	11%	0%	3%	6%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		60.1		59.2	59.2			49.4		49.4	49.4	
Effective Green, g (s)		60.1		59.2	59.2			49.4		49.4	49.4	
Actuated g/C Ratio		0.50		0.49	0.49			0.41		0.41	0.41	
Clearance Time (s)		4.9		5.8	5.8			5.6		5.6	5.6	
Vehicle Extension (s)		3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		724		626	736			632		281	677	
v/s Ratio Prot					0.02						0.12	
v/s Ratio Perm		0.02		c0.35				c0.27		0.18		
v/c Ratio		0.04		0.72	0.04			0.65		0.43	0.30	
Uniform Delay, d1		15.3		23.9	15.7			28.4		25.2	23.7	
Progression Factor		1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.1		7.0	0.1			5.2		4.8	1.1	
Delay (s)		15.4		30.8	15.8			33.6		30.0	24.8	
Level of Service		B		C	B			C		C	C	
Approach Delay (s)		15.4			29.7			33.6			26.7	
Approach LOS		B			C			C			C	

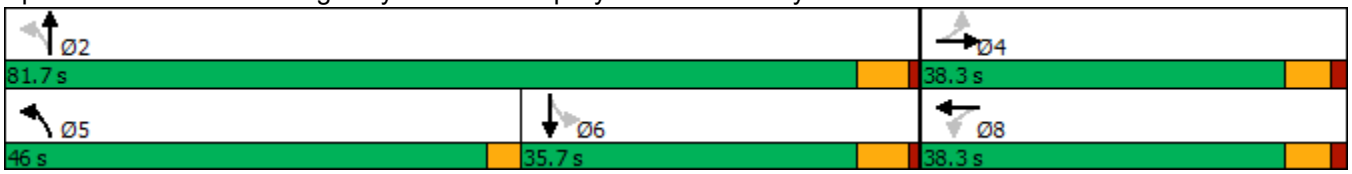
Intersection Summary			
HCM 2000 Control Delay	29.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.4
Intersection Capacity Utilization	80.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

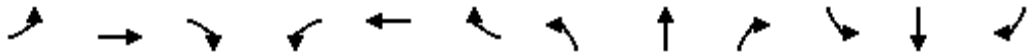
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	40	7	13	12	609	296	73	474
Future Volume (vph)	40	7	13	12	609	296	73	474
Lane Group Flow (vph)	0	87	0	48	716	367	0	672
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases		4		8	5	2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	20.0	20.0	20.0
Minimum Split (s)	38.3	38.3	38.3	38.3	9.5	28.4	28.4	28.4
Total Split (s)	38.3	38.3	38.3	38.3	46.0	81.7	35.7	35.7
Total Split (%)	31.9%	31.9%	31.9%	31.9%	38.3%	68.1%	29.8%	29.8%
Yellow Time (s)	4.2	4.2	4.2	4.2	3.0	4.6	4.6	4.6
All-Red Time (s)	1.6	1.6	1.6	1.6	0.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0		0.0
Total Lost Time (s)		5.8		5.8	3.0	5.6		5.6
Lead/Lag					Lead		Lag	Lag
Lead-Lag Optimize?					Yes		Yes	Yes
Recall Mode	None	None	None	None	None	Max	Max	Max
v/c Ratio		0.52		0.24	0.83	0.29		0.82
Control Delay		42.5		30.0	24.1	4.1		41.4
Queue Delay		0.0		0.0	0.0	0.0		0.0
Total Delay		42.5		30.0	24.1	4.1		41.4
Queue Length 50th (m)		12.1		5.4	85.0	16.6		65.2
Queue Length 95th (m)		25.8		15.1	#159.8	31.8		#94.7
Internal Link Dist (m)		658.6		1175.6		599.4		491.5
Turn Bay Length (m)					85.0			
Base Capacity (vph)		421		511	865	1274		819
Starvation Cap Reductn		0		0	0	0		0
Spillback Cap Reductn		0		0	0	0		0
Storage Cap Reductn		0		0	0	0		0
Reduced v/c Ratio		0.21		0.09	0.83	0.29		0.82

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 96.2
Natural Cycle: 130
Control Type: Semi Act-Uncoord
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

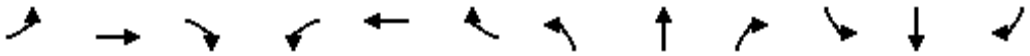
Splits and Phases: 2: Highway 115 NB Ramp/Syer Line & County Road 10





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	7	27	13	12	16	609	296	16	73	474	24
Future Volume (vph)	40	7	27	13	12	16	609	296	16	73	474	24
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		5.8			5.8		3.0	5.6			5.6	
Lane Util. Factor		1.00			1.00		1.00	1.00			0.95	
Frt		0.95			0.95		1.00	0.99			0.99	
Flt Protected		0.97			0.98		0.95	1.00			0.99	
Satd. Flow (prot)		1443			1631		1599	1572			3098	
Flt Permitted		0.81			0.88		0.23	1.00			0.83	
Satd. Flow (perm)		1193			1466		390	1572			2595	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	47	8	32	15	14	19	716	348	19	86	558	28
RTOR Reduction (vph)	0	22	0	0	17	0	0	1	0	0	2	0
Lane Group Flow (vph)	0	65	0	0	31	0	716	366	0	0	670	0
Heavy Vehicles (%)	7%	0%	23%	0%	0%	0%	4%	11%	0%	8%	5%	19%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		9.4			9.4		76.6	76.6			30.3	
Effective Green, g (s)		9.4			9.4		76.6	76.6			30.3	
Actuated g/C Ratio		0.10			0.10		0.79	0.79			0.31	
Clearance Time (s)		5.8			5.8		3.0	5.6			5.6	
Vehicle Extension (s)		3.0			3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		115			141		844	1236			807	
v/s Ratio Prot							c0.38	0.23				
v/s Ratio Perm		c0.05			0.02		c0.29				0.26	
v/c Ratio		0.57			0.22		0.85	0.30			0.83	
Uniform Delay, d1		42.1			40.6		14.7	2.9			31.2	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		6.3			0.8		7.9	0.6			9.7	
Delay (s)		48.4			41.4		22.7	3.5			40.8	
Level of Service		D			D		C	A			D	
Approach Delay (s)		48.4			41.4			16.2			40.8	
Approach LOS		D			D			B			D	

Intersection Summary			
HCM 2000 Control Delay	27.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	97.4	Sum of lost time (s)	14.4
Intersection Capacity Utilization	76.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	22	1	0	24	0	1	0	0	0	0	15
Future Volume (Veh/h)	73	22	1	0	24	0	1	0	0	0	0	15
Sign Control		Free			Free			Stop			Stop	
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)	79	24	1	0	26	0	1	0	0	0	0	16
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	26			25			224	208	24	208	209	26
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	26			25			224	208	24	208	209	26
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			100			100	100	100	100	100	98
cM capacity (veh/h)	1588			1603			697	658	1058	720	657	1050

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	104	26	1	16
Volume Left	79	0	1	0
Volume Right	1	0	0	16
cSH	1588	1603	697	1050
Volume to Capacity	0.05	0.00	0.00	0.02
Queue Length 95th (m)	1.3	0.0	0.0	0.4
Control Delay (s)	5.7	0.0	10.2	8.5
Lane LOS	A		B	A
Approach Delay (s)	5.7	0.0	10.2	8.5
Approach LOS			B	A

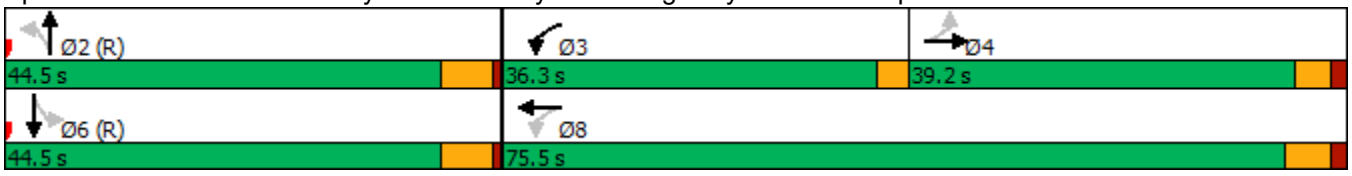
Intersection Summary			
Average Delay	5.0		
Intersection Capacity Utilization	22.4%	ICU Level of Service	A
Analysis Period (min)	15		

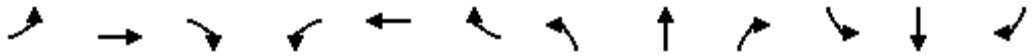
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	21	9	667	28	23	346	69	255
Future Volume (vph)	21	9	667	28	23	346	69	255
Lane Group Flow (vph)	0	68	702	41	0	426	73	281
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases		4	3	8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	5.0	10.0	20.0	20.0	20.0	20.0
Minimum Split (s)	39.2	39.2	9.5	39.2	25.6	25.6	25.6	25.6
Total Split (s)	39.2	39.2	36.3	75.5	44.5	44.5	44.5	44.5
Total Split (%)	32.7%	32.7%	30.3%	62.9%	37.1%	37.1%	37.1%	37.1%
Yellow Time (s)	3.3	3.3	3.0	4.2	4.6	4.6	4.6	4.6
All-Red Time (s)	1.6	1.6	0.0	1.6	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		4.9	3.0	5.8		5.6	5.6	5.6
Lead/Lag	Lag	Lag	Lead					
Lead-Lag Optimize?	Yes	Yes	Yes					
Recall Mode	Max	Max	None	Max	C-Max	C-Max	C-Max	C-Max
v/c Ratio		0.16	0.82	0.05		0.81	0.40	0.53
Control Delay		18.0	26.4	8.5		50.4	39.7	37.1
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0
Total Delay		18.0	26.4	8.5		50.4	39.7	37.1
Queue Length 50th (m)		5.6	112.3	2.9		95.6	14.0	56.2
Queue Length 95th (m)		17.3	159.3	8.0		#148.0	29.6	84.6
Internal Link Dist (m)		592.7		625.0		491.5		559.6
Turn Bay Length (m)			100.0				82.0	
Base Capacity (vph)		424	857	907		526	182	534
Starvation Cap Reductn		0	0	0		0	0	0
Spillback Cap Reductn		0	0	0		0	0	0
Storage Cap Reductn		0	0	0		0	0	0
Reduced v/c Ratio		0.16	0.82	0.05		0.81	0.40	0.53

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: County Road 10 & Syer Line/Highway 115 SB Ramp





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	9	35	667	28	11	23	346	36	69	255	12
Future Volume (vph)	21	9	35	667	28	11	23	346	36	69	255	12
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.9		3.0	5.8			5.6		5.6	5.6	
Lane Util. Factor		1.00		1.00	1.00			1.00		1.00	1.00	
Frt		0.93		1.00	0.96			0.99		1.00	0.99	
Flt Protected		0.98		0.95	1.00			1.00		0.95	1.00	
Satd. Flow (prot)		1445		1662	1554			1660		1630	1644	
Flt Permitted		0.92		0.69	1.00			0.97		0.33	1.00	
Satd. Flow (perm)		1351		1215	1554			1614		562	1644	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	22	9	37	702	29	12	24	364	38	73	268	13
RTOR Reduction (vph)	0	26	0	0	5	0	0	3	0	0	1	0
Lane Group Flow (vph)	0	42	0	702	36	0	0	423	0	73	280	0
Heavy Vehicles (%)	0%	17%	15%	0%	5%	14%	6%	2%	20%	2%	6%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		35.4		69.7	69.7			38.9		38.9	38.9	
Effective Green, g (s)		35.4		69.7	69.7			38.9		38.9	38.9	
Actuated g/C Ratio		0.29		0.58	0.58			0.32		0.32	0.32	
Clearance Time (s)		4.9		3.0	5.8			5.6		5.6	5.6	
Vehicle Extension (s)		3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		398		825	902			523		182	532	
v/s Ratio Prot				c0.23	0.02						0.17	
v/s Ratio Perm		0.03		c0.27				c0.26		0.13		
v/c Ratio		0.11		0.85	0.04			0.81		0.40	0.53	
Uniform Delay, d1		30.8		18.9	10.8			37.2		31.5	33.0	
Progression Factor		1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.5		8.4	0.1			12.7		6.5	3.7	
Delay (s)		31.3		27.3	10.9			49.9		38.0	36.7	
Level of Service		C		C	B			D		D	D	
Approach Delay (s)		31.3			26.4			49.9			37.0	
Approach LOS		C			C			D			D	

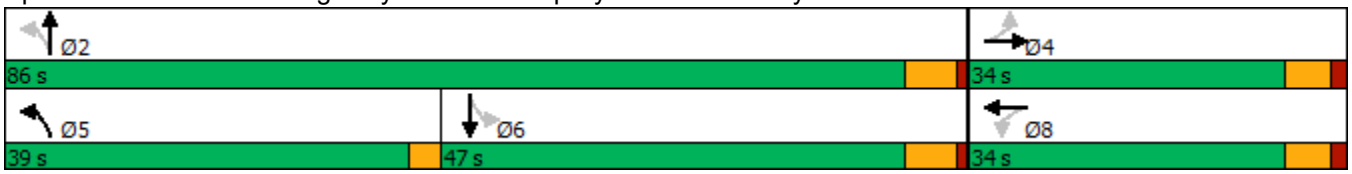
Intersection Summary			
HCM 2000 Control Delay	35.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	99.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

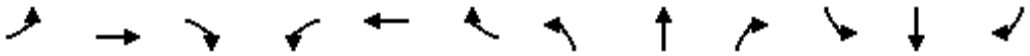
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	143	13	12	38	407	233	25	886
Future Volume (vph)	143	13	12	38	407	233	25	886
Lane Group Flow (vph)	0	228	0	87	428	259	0	1003
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases		4		8	5	2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	20.0	20.0	20.0
Minimum Split (s)	33.6	33.6	33.6	33.6	9.5	25.6	25.6	25.6
Total Split (s)	34.0	34.0	34.0	34.0	39.0	86.0	47.0	47.0
Total Split (%)	28.3%	28.3%	28.3%	28.3%	32.5%	71.7%	39.2%	39.2%
Yellow Time (s)	4.2	4.2	4.2	4.2	3.0	4.6	4.6	4.6
All-Red Time (s)	1.6	1.6	1.6	1.6	0.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0		0.0
Total Lost Time (s)		5.8		5.8	3.0	5.6		5.6
Lead/Lag					Lead		Lag	Lag
Lead-Lag Optimize?					Yes		Yes	Yes
Recall Mode	None	None	None	None	None	Max	Max	Max
v/c Ratio		0.87		0.25	0.82	0.23		0.79
Control Delay		71.7		29.1	33.9	7.5		36.8
Queue Delay		0.0		0.0	0.0	0.0		0.0
Total Delay		71.7		29.1	33.9	7.5		36.8
Queue Length 50th (m)		49.8		12.3	65.4	21.6		115.4
Queue Length 95th (m)		#89.9		26.9	104.3	34.4		#173.1
Internal Link Dist (m)		658.6		1175.6		599.4		491.5
Turn Bay Length (m)					85.0			
Base Capacity (vph)		306		400	615	1142		1277
Starvation Cap Reductn		0		0	0	0		0
Spillback Cap Reductn		0		0	0	0		0
Storage Cap Reductn		0		0	0	0		0
Reduced v/c Ratio		0.75		0.22	0.70	0.23		0.79

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 116
Natural Cycle: 90
Control Type: Semi Act-Uncoord
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

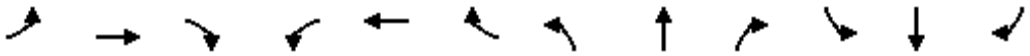
Splits and Phases: 2: Highway 115 NB Ramp/Syer Line & County Road 10





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	143	13	60	12	38	32	407	233	13	25	886	42
Future Volume (vph)	143	13	60	12	38	32	407	233	13	25	886	42
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		5.8			5.8		3.0	5.6			5.6	
Lane Util. Factor		1.00			1.00		1.00	1.00			0.95	
Frt		0.96			0.95		1.00	0.99			0.99	
Flt Protected		0.97			0.99		0.95	1.00			1.00	
Satd. Flow (prot)		1551			1645		1646	1643			3208	
Flt Permitted		0.76			0.95		0.15	1.00			0.94	
Satd. Flow (perm)		1214			1567		255	1643			3021	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	151	14	63	13	40	34	428	245	14	26	933	44
RTOR Reduction (vph)	0	12	0	0	20	0	0	2	0	0	2	0
Lane Group Flow (vph)	0	216	0	0	67	0	428	257	0	0	1001	0
Heavy Vehicles (%)	4%	0%	9%	0%	0%	0%	1%	6%	0%	0%	2%	22%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		24.1			24.1		80.5	80.5			49.0	
Effective Green, g (s)		24.1			24.1		80.5	80.5			49.0	
Actuated g/C Ratio		0.21			0.21		0.69	0.69			0.42	
Clearance Time (s)		5.8			5.8		3.0	5.6			5.6	
Vehicle Extension (s)		3.0			3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		252			325		518	1140			1276	
v/s Ratio Prot							c0.20	0.16				
v/s Ratio Perm		c0.18			0.04		c0.37				0.33	
v/c Ratio		0.86			0.21		0.83	0.23			0.78	
Uniform Delay, d1		44.3			38.0		24.8	6.4			28.9	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		23.8			0.3		10.4	0.5			4.9	
Delay (s)		68.1			38.4		35.2	6.9			33.8	
Level of Service		E			D		D	A			C	
Approach Delay (s)		68.1			38.4			24.5			33.8	
Approach LOS		E			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	34.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	116.0	Sum of lost time (s)	14.4
Intersection Capacity Utilization	87.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	32	1	0	18	0	1	0	0	0	0	62
Future Volume (Veh/h)	18	32	1	0	18	0	1	0	0	0	0	62
Sign Control		Free			Free			Stop			Stop	
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)	20	35	1	0	20	0	1	0	0	0	0	67
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			36			162	96	36	96	96	20
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	20			36			162	96	36	96	96	20
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	100	100	100	100	94
cM capacity (veh/h)	1596			1588			749	788	1043	879	788	1058

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	56	20	1	67
Volume Left	20	0	1	0
Volume Right	1	0	0	67
cSH	1596	1588	749	1058
Volume to Capacity	0.01	0.00	0.00	0.06
Queue Length 95th (m)	0.3	0.0	0.0	1.6
Control Delay (s)	2.7	0.0	9.8	8.6
Lane LOS	A		A	A
Approach Delay (s)	2.7	0.0	9.8	8.6
Approach LOS			A	A

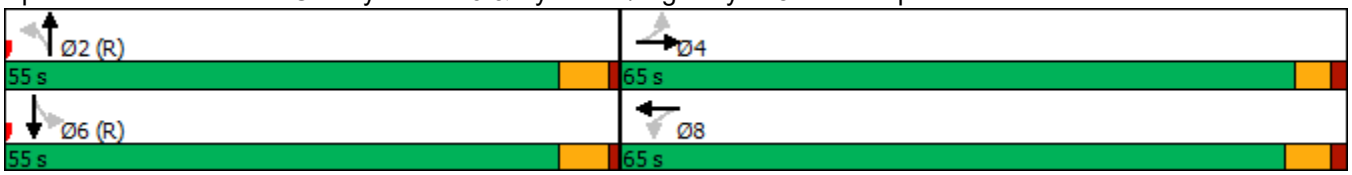
Intersection Summary			
Average Delay	5.1		
Intersection Capacity Utilization	20.5%	ICU Level of Service	A
Analysis Period (min)	15		

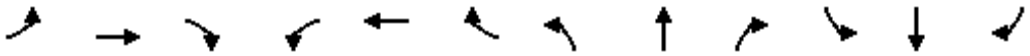
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	7	6	397	17	15	316	114	183
Future Volume (vph)	7	6	397	17	15	316	114	183
Lane Group Flow (vph)	0	55	473	50	0	464	136	224
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	20.0	20.0	20.0	20.0
Minimum Split (s)	39.2	39.2	39.2	39.2	25.6	25.6	25.6	25.6
Total Split (s)	65.0	65.0	65.0	65.0	55.0	55.0	55.0	55.0
Total Split (%)	54.2%	54.2%	54.2%	54.2%	45.8%	45.8%	45.8%	45.8%
Yellow Time (s)	3.3	3.3	4.2	4.2	4.6	4.6	4.6	4.6
All-Red Time (s)	1.6	1.6	1.6	1.6	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		4.9	5.8	5.8		5.6	5.6	5.6
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	C-Max	C-Max	C-Max	C-Max
v/c Ratio		0.07	0.76	0.07		0.73	0.53	0.33
Control Delay		6.8	34.3	8.5		37.2	35.5	25.7
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0
Total Delay		6.8	34.3	8.5		37.2	35.5	25.7
Queue Length 50th (m)		1.8	92.1	2.5		93.5	24.9	37.1
Queue Length 95th (m)		7.8	123.5	8.4		121.9	42.7	52.9
Internal Link Dist (m)		592.7		625.0		491.5		559.6
Turn Bay Length (m)			100.0				82.0	
Base Capacity (vph)		744	622	739		636	259	678
Starvation Cap Reductn		0	0	0		0	0	0
Spillback Cap Reductn		0	0	0		0	0	0
Storage Cap Reductn		0	0	0		0	0	0
Reduced v/c Ratio		0.07	0.76	0.07		0.73	0.53	0.33

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 1: County Road 10 & Syer Line/Highway 115 SB Ramp





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	6	34	397	17	25	15	316	59	114	183	5
Future Volume (vph)	7	6	34	397	17	25	15	316	59	114	183	5
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.9		5.8	5.8			5.6		5.6	5.6	
Lane Util. Factor		1.00		1.00	1.00			1.00		1.00	1.00	
Frt		0.90		1.00	0.91			0.98		1.00	1.00	
Flt Protected		0.99		0.95	1.00			1.00		0.95	1.00	
Satd. Flow (prot)		1471		1662	1469			1554		1614	1647	
Flt Permitted		0.98		0.72	1.00			0.98		0.37	1.00	
Satd. Flow (perm)		1445		1262	1469			1532		631	1647	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	8	7	40	473	20	30	18	376	70	136	218	6
RTOR Reduction (vph)	0	20	0	0	15	0	0	5	0	0	1	0
Lane Group Flow (vph)	0	35	0	473	35	0	0	459	0	136	223	0
Heavy Vehicles (%)	0%	0%	9%	0%	9%	8%	30%	11%	0%	3%	6%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		60.1		59.2	59.2			49.4		49.4	49.4	
Effective Green, g (s)		60.1		59.2	59.2			49.4		49.4	49.4	
Actuated g/C Ratio		0.50		0.49	0.49			0.41		0.41	0.41	
Clearance Time (s)		4.9		5.8	5.8			5.6		5.6	5.6	
Vehicle Extension (s)		3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		723		622	724			630		259	678	
v/s Ratio Prot					0.02						0.14	
v/s Ratio Perm		0.02		c0.37				c0.30		0.22		
v/c Ratio		0.05		0.76	0.05			0.73		0.53	0.33	
Uniform Delay, d1		15.3		24.7	15.8			29.7		26.5	24.0	
Progression Factor		1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.1		8.5	0.1			7.2		7.4	1.3	
Delay (s)		15.4		33.2	15.9			36.9		33.9	25.3	
Level of Service		B		C	B			D		C	C	
Approach Delay (s)		15.4			31.5			36.9			28.6	
Approach LOS		B			C			D			C	

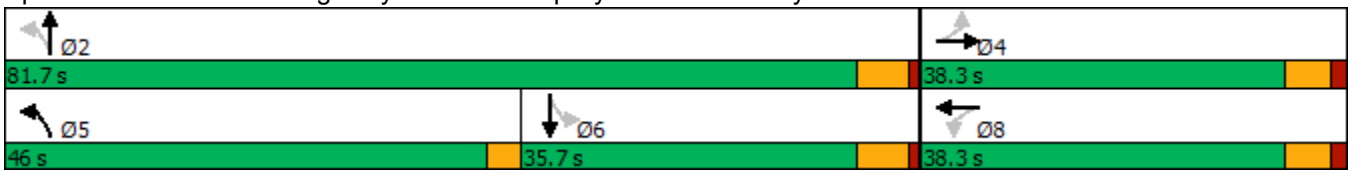
Intersection Summary			
HCM 2000 Control Delay	31.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.4
Intersection Capacity Utilization	84.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	47	8	14	13	632	325	81	499
Future Volume (vph)	47	8	14	13	632	325	81	499
Lane Group Flow (vph)	0	98	0	52	744	403	0	715
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases		4		8	5	2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	20.0	20.0	20.0
Minimum Split (s)	38.3	38.3	38.3	38.3	9.5	28.4	28.4	28.4
Total Split (s)	38.3	38.3	38.3	38.3	46.0	81.7	35.7	35.7
Total Split (%)	31.9%	31.9%	31.9%	31.9%	38.3%	68.1%	29.8%	29.8%
Yellow Time (s)	4.2	4.2	4.2	4.2	3.0	4.6	4.6	4.6
All-Red Time (s)	1.6	1.6	1.6	1.6	0.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0		0.0
Total Lost Time (s)		5.8		5.8	3.0	5.6		5.6
Lead/Lag					Lead		Lag	Lag
Lead-Lag Optimize?					Yes		Yes	Yes
Recall Mode	None	None	None	None	None	Max	Max	Max
v/c Ratio		0.57		0.25	0.88	0.32		0.90
Control Delay		45.4		29.3	31.3	4.6		48.7
Queue Delay		0.0		0.0	0.0	0.0		0.0
Total Delay		45.4		29.3	31.3	4.6		48.7
Queue Length 50th (m)		14.7		5.8	103.8	20.2		72.8
Queue Length 95th (m)		29.5		15.8	#185.9	38.5		#109.6
Internal Link Dist (m)		658.6		1175.6		599.4		491.5
Turn Bay Length (m)					85.0			
Base Capacity (vph)		415		506	841	1264		798
Starvation Cap Reductn		0		0	0	0		0
Spillback Cap Reductn		0		0	0	0		0
Storage Cap Reductn		0		0	0	0		0
Reduced v/c Ratio		0.24		0.10	0.88	0.32		0.90

Intersection Summary

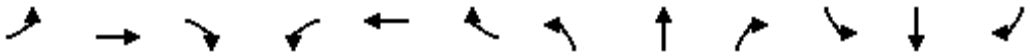
Cycle Length: 120
Actuated Cycle Length: 97.1
Natural Cycle: 150
Control Type: Semi Act-Uncoord
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 115 NB Ramp/Syer Line & County Road 10



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	8	29	14	13	18	632	325	18	81	499	28
Future Volume (vph)	47	8	29	14	13	18	632	325	18	81	499	28
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		5.8			5.8		3.0	5.6			5.6	
Lane Util. Factor		1.00			1.00		1.00	1.00			0.95	
Frt		0.95			0.95		1.00	0.99			0.99	
Flt Protected		0.97			0.98		0.95	1.00			0.99	
Satd. Flow (prot)		1450			1630		1599	1572			3093	
Flt Permitted		0.80			0.88		0.20	1.00			0.82	
Satd. Flow (perm)		1188			1461		345	1572			2546	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	55	9	34	16	15	21	744	382	21	95	587	33
RTOR Reduction (vph)	0	20	0	0	19	0	0	1	0	0	3	0
Lane Group Flow (vph)	0	78	0	0	33	0	744	402	0	0	712	0
Heavy Vehicles (%)	7%	0%	23%	0%	0%	0%	4%	11%	0%	8%	5%	19%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		10.3			10.3		76.7	76.7			30.4	
Effective Green, g (s)		10.3			10.3		76.7	76.7			30.4	
Actuated g/C Ratio		0.10			0.10		0.78	0.78			0.31	
Clearance Time (s)		5.8			5.8		3.0	5.6			5.6	
Vehicle Extension (s)		3.0			3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		124			152		820	1225			786	
v/s Ratio Prot							c0.40	0.26				
v/s Ratio Perm		c0.07			0.02		c0.31				0.28	
v/c Ratio		0.63			0.22		0.91	0.33			0.91	
Uniform Delay, d1		42.2			40.4		17.5	3.2			32.6	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		10.0			0.7		13.6	0.7			16.0	
Delay (s)		52.3			41.1		31.1	3.9			48.7	
Level of Service		D			D		C	A			D	
Approach Delay (s)		52.3			41.1			21.6			48.7	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	33.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	98.4	Sum of lost time (s)	14.4
Intersection Capacity Utilization	79.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	24	1	0	27	0	1	0	0	0	0	15
Future Volume (Veh/h)	73	24	1	0	27	0	1	0	0	0	0	15
Sign Control		Free			Free			Stop			Stop	
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)	79	26	1	0	29	0	1	0	0	0	0	16
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	29			27			230	214	26	214	214	29
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	29			27			230	214	26	214	214	29
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			100			100	100	100	100	100	98
cM capacity (veh/h)	1584			1600			691	653	1055	715	653	1046

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	106	29	1	16
Volume Left	79	0	1	0
Volume Right	1	0	0	16
cSH	1584	1600	691	1046
Volume to Capacity	0.05	0.00	0.00	0.02
Queue Length 95th (m)	1.3	0.0	0.0	0.4
Control Delay (s)	5.6	0.0	10.2	8.5
Lane LOS	A		B	A
Approach Delay (s)	5.6	0.0	10.2	8.5
Approach LOS			B	A

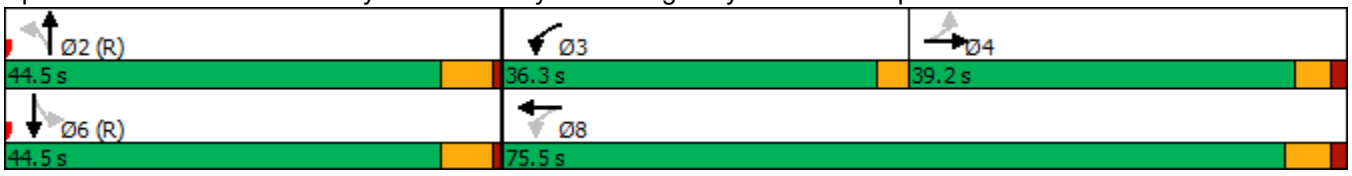
Intersection Summary			
Average Delay	4.9		
Intersection Capacity Utilization	22.5%	ICU Level of Service	A
Analysis Period (min)	15		

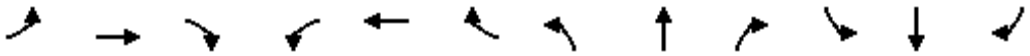
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	23	10	695	31	26	380	79	289
Future Volume (vph)	23	10	695	31	26	380	79	289
Lane Group Flow (vph)	0	76	732	48	0	468	83	318
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases		4	3	8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	5.0	10.0	20.0	20.0	20.0	20.0
Minimum Split (s)	39.2	39.2	9.5	39.2	25.6	25.6	25.6	25.6
Total Split (s)	39.2	39.2	36.3	75.5	44.5	44.5	44.5	44.5
Total Split (%)	32.7%	32.7%	30.3%	62.9%	37.1%	37.1%	37.1%	37.1%
Yellow Time (s)	3.3	3.3	3.0	4.2	4.6	4.6	4.6	4.6
All-Red Time (s)	1.6	1.6	0.0	1.6	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)		4.9	3.0	5.8		5.6	5.6	5.6
Lead/Lag	Lag	Lag	Lead					
Lead-Lag Optimize?	Yes	Yes	Yes					
Recall Mode	Max	Max	None	Max	C-Max	C-Max	C-Max	C-Max
v/c Ratio		0.18	0.86	0.05		0.89	0.51	0.60
Control Delay		18.1	29.8	8.3		59.5	45.6	39.3
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0
Total Delay		18.1	29.8	8.3		59.5	45.6	39.3
Queue Length 50th (m)		6.4	120.8	3.3		109.2	16.6	65.4
Queue Length 95th (m)		19.0	#185.4	8.8		#172.8	35.2	97.1
Internal Link Dist (m)		592.7		625.0		491.5		559.6
Turn Bay Length (m)			100.0				82.0	
Base Capacity (vph)		420	850	904		523	164	533
Starvation Cap Reductn		0	0	0		0	0	0
Spillback Cap Reductn		0	0	0		0	0	0
Storage Cap Reductn		0	0	0		0	0	0
Reduced v/c Ratio		0.18	0.86	0.05		0.89	0.51	0.60

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: County Road 10 & Syer Line/Highway 115 SB Ramp





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	10	39	695	31	14	26	380	39	79	289	13
Future Volume (vph)	23	10	39	695	31	14	26	380	39	79	289	13
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		4.9		3.0	5.8			5.6		5.6	5.6	
Lane Util. Factor		1.00		1.00	1.00			1.00		1.00	1.00	
Frt		0.93		1.00	0.95			0.99		1.00	0.99	
Flt Protected		0.98		0.95	1.00			1.00		0.95	1.00	
Satd. Flow (prot)		1445		1662	1547			1661		1630	1644	
Flt Permitted		0.92		0.68	1.00			0.96		0.30	1.00	
Satd. Flow (perm)		1346		1191	1547			1607		508	1644	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	24	11	41	732	33	15	27	400	41	83	304	14
RTOR Reduction (vph)	0	29	0	0	6	0	0	3	0	0	1	0
Lane Group Flow (vph)	0	47	0	732	42	0	0	465	0	83	317	0
Heavy Vehicles (%)	0%	17%	15%	0%	5%	14%	6%	2%	20%	2%	6%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		34.9		69.7	69.7			38.9		38.9	38.9	
Effective Green, g (s)		34.9		69.7	69.7			38.9		38.9	38.9	
Actuated g/C Ratio		0.29		0.58	0.58			0.32		0.32	0.32	
Clearance Time (s)		4.9		3.0	5.8			5.6		5.6	5.6	
Vehicle Extension (s)		3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		391		820	898			520		164	532	
v/s Ratio Prot				c0.24	0.03						0.19	
v/s Ratio Perm		0.03		c0.28				c0.29		0.16		
v/c Ratio		0.12		0.89	0.05			0.89		0.51	0.60	
Uniform Delay, d1		31.3		20.0	10.8			38.6		32.8	34.0	
Progression Factor		1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.6		12.0	0.1			20.5		10.7	4.8	
Delay (s)		31.9		32.0	10.9			59.1		43.5	38.8	
Level of Service		C		C	B			E		D	D	
Approach Delay (s)		31.9			30.7			59.1			39.8	
Approach LOS		C			C			E			D	

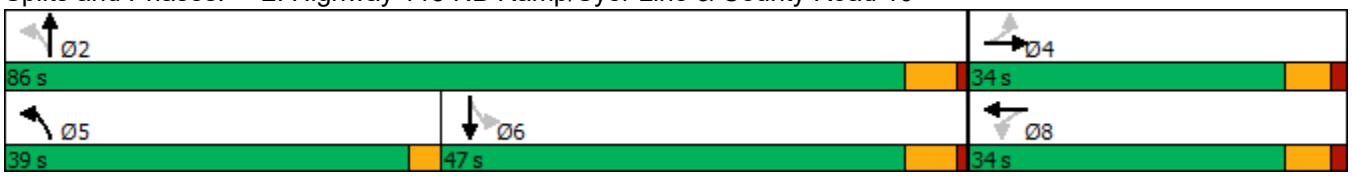
Intersection Summary			
HCM 2000 Control Delay	40.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	105.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

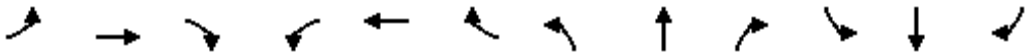
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	160	15	13	43	419	255	27	933
Future Volume (vph)	160	15	13	43	419	255	27	933
Lane Group Flow (vph)	0	252	0	97	441	283	0	1067
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases		4		8	5	2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	6	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	20.0	20.0	20.0
Minimum Split (s)	33.6	33.6	33.6	33.6	9.5	25.6	25.6	25.6
Total Split (s)	34.0	34.0	34.0	34.0	39.0	86.0	47.0	47.0
Total Split (%)	28.3%	28.3%	28.3%	28.3%	32.5%	71.7%	39.2%	39.2%
Yellow Time (s)	4.2	4.2	4.2	4.2	3.0	4.6	4.6	4.6
All-Red Time (s)	1.6	1.6	1.6	1.6	0.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0		0.0
Total Lost Time (s)		5.8		5.8	3.0	5.6		5.6
Lead/Lag					Lead		Lag	Lag
Lead-Lag Optimize?					Yes		Yes	Yes
Recall Mode	None	None	None	None	None	Max	Max	Max
v/c Ratio		0.92		0.26	0.87	0.25		0.89
Control Delay		79.7		29.7	45.7	8.1		44.7
Queue Delay		0.0		0.0	0.0	0.0		0.0
Total Delay		79.7		29.7	45.7	8.1		44.7
Queue Length 50th (m)		57.4		14.4	79.6	25.0		133.2
Queue Length 95th (m)		#106.8		30.0	119.4	37.9		#191.8
Internal Link Dist (m)		658.6		1175.6		599.4		491.5
Turn Bay Length (m)					85.0			
Base Capacity (vph)		293		392	578	1119		1204
Starvation Cap Reductn		0		0	0	0		0
Spillback Cap Reductn		0		0	0	0		0
Storage Cap Reductn		0		0	0	0		0
Reduced v/c Ratio		0.86		0.25	0.76	0.25		0.89

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 118.2
Natural Cycle: 100
Control Type: Semi Act-Uncoord
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

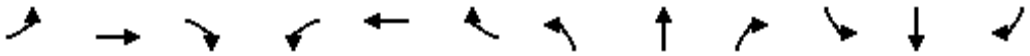
Splits and Phases: 2: Highway 115 NB Ramp/Syer Line & County Road 10





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	160	15	65	13	43	36	419	255	14	27	933	54
Future Volume (vph)	160	15	65	13	43	36	419	255	14	27	933	54
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)		5.8			5.8		3.0	5.6			5.6	
Lane Util. Factor		1.00			1.00		1.00	1.00			0.95	
Frt		0.96			0.95		1.00	0.99			0.99	
Flt Protected		0.97			0.99		0.95	1.00			1.00	
Satd. Flow (prot)		1553			1646		1646	1643			3198	
Flt Permitted		0.74			0.94		0.11	1.00			0.94	
Satd. Flow (perm)		1184			1564		192	1643			3005	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	168	16	68	14	45	38	441	268	15	28	982	57
RTOR Reduction (vph)	0	11	0	0	19	0	0	2	0	0	3	0
Lane Group Flow (vph)	0	241	0	0	78	0	441	281	0	0	1064	0
Heavy Vehicles (%)	4%	0%	9%	0%	0%	0%	1%	6%	0%	0%	2%	22%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		26.3			26.3		80.5	80.5			47.3	
Effective Green, g (s)		26.3			26.3		80.5	80.5			47.3	
Actuated g/C Ratio		0.22			0.22		0.68	0.68			0.40	
Clearance Time (s)		5.8			5.8		3.0	5.6			5.6	
Vehicle Extension (s)		3.0			3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		263			347		502	1118			1202	
v/s Ratio Prot							c0.22	0.17				
v/s Ratio Perm		c0.20			0.05		c0.37				0.35	
v/c Ratio		0.92			0.22		0.88	0.25			0.89	
Uniform Delay, d1		44.9			37.6		30.6	7.3			32.9	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		33.9			0.3		15.9	0.5			9.7	
Delay (s)		78.8			37.9		46.5	7.8			42.6	
Level of Service		E			D		D	A			D	
Approach Delay (s)		78.8			37.9			31.4			42.6	
Approach LOS		E			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	42.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	118.2	Sum of lost time (s)	14.4
Intersection Capacity Utilization	91.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	35	1	0	20	0	1	0	0	0	0	62
Future Volume (Veh/h)	18	35	1	0	20	0	1	0	0	0	0	62
Sign Control		Free			Free			Stop			Stop	
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)	20	38	1	0	22	0	1	0	0	0	0	67
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	22			39			168	100	38	100	101	22
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	22			39			168	100	38	100	101	22
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	100	100	100	100	94
cM capacity (veh/h)	1593			1584			743	783	1039	872	783	1055

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	59	22	1	67
Volume Left	20	0	1	0
Volume Right	1	0	0	67
cSH	1593	1584	743	1055
Volume to Capacity	0.01	0.00	0.00	0.06
Queue Length 95th (m)	0.3	0.0	0.0	1.6
Control Delay (s)	2.5	0.0	9.9	8.6
Lane LOS	A		A	A
Approach Delay (s)	2.5	0.0	9.9	8.6
Approach LOS			A	A

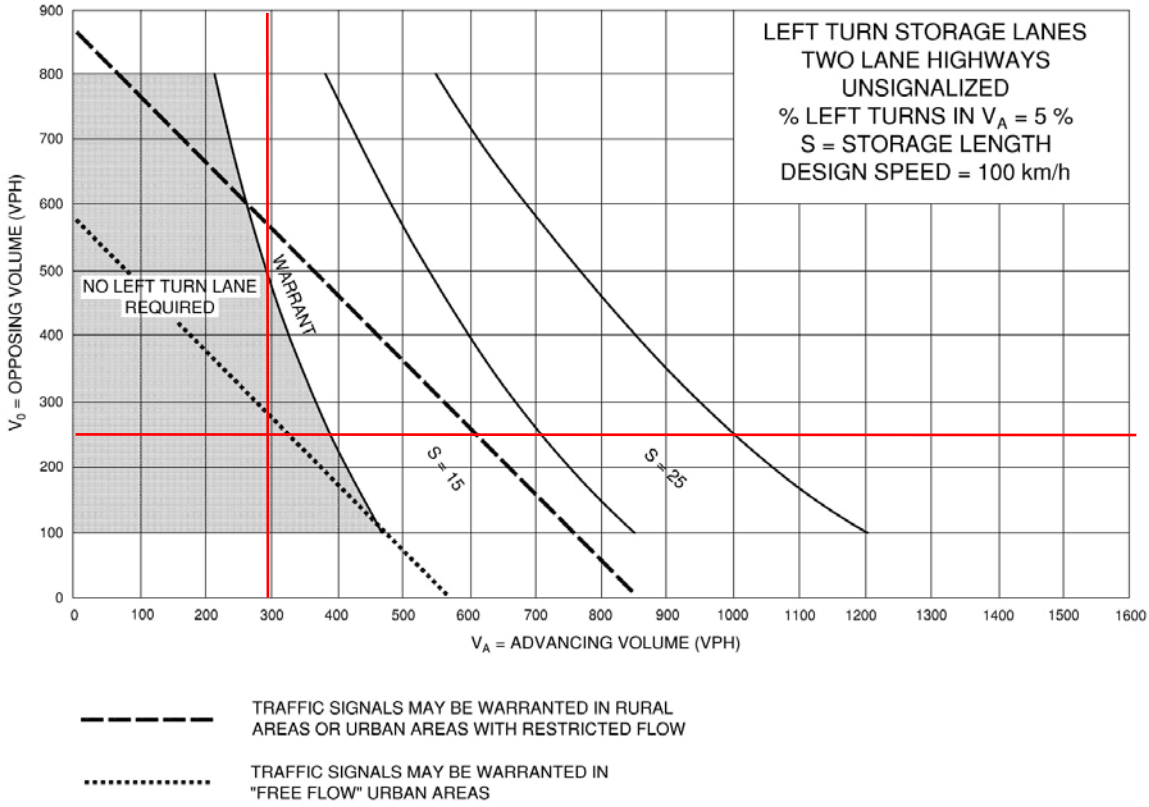
Intersection Summary			
Average Delay	5.0		
Intersection Capacity Utilization	20.6%	ICU Level of Service	A
Analysis Period (min)	15		

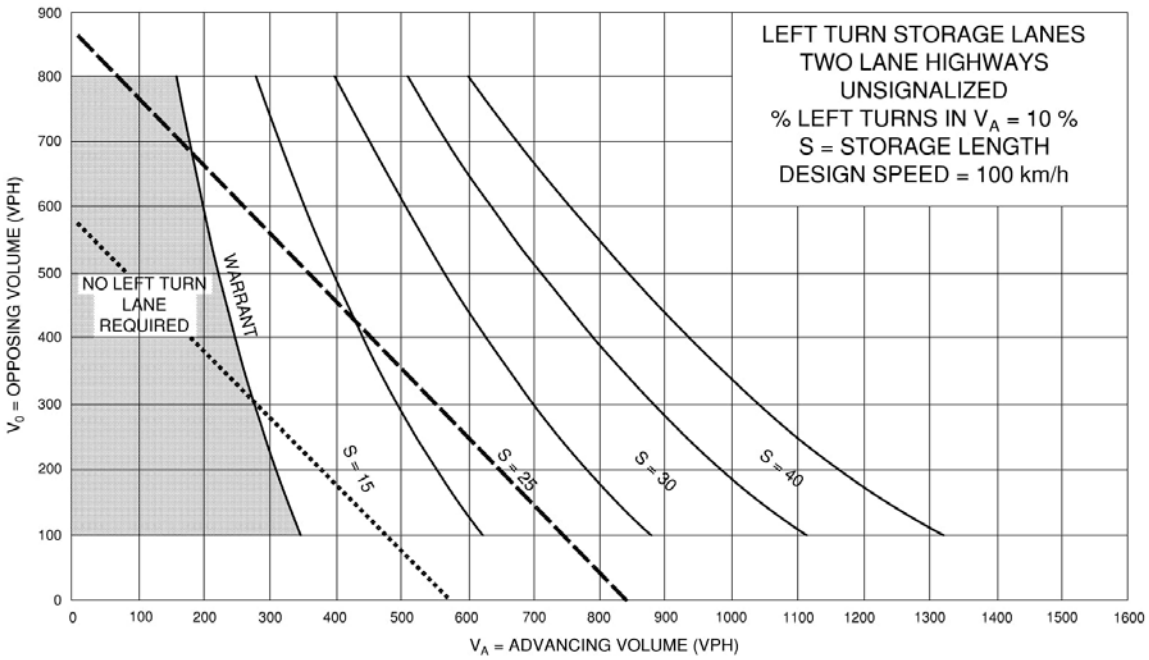
Appendix G –
MTO Left Turn Analysis

Highway 115 SB Ramp & Syer Line / County Road 10

2022 Existing - Northbound **Exhibit 9A-22**

Critical Case - PM Peak Hour



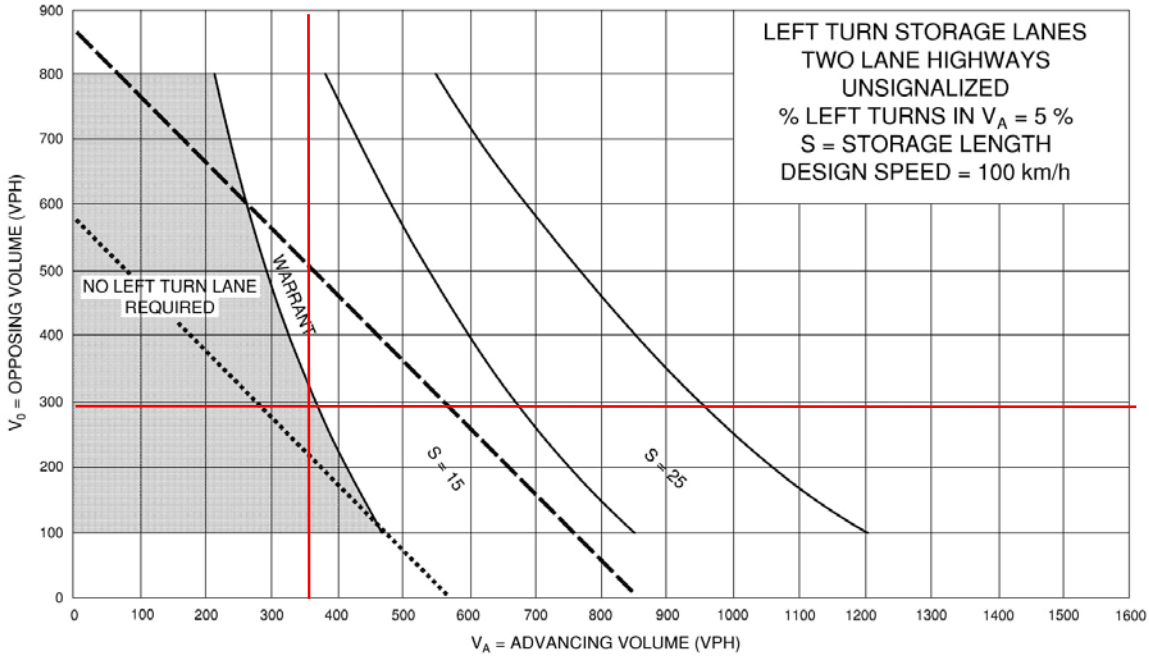


Highway 115 SB Ramp & Syer Line / County Road 10

2027 Background - Northbound

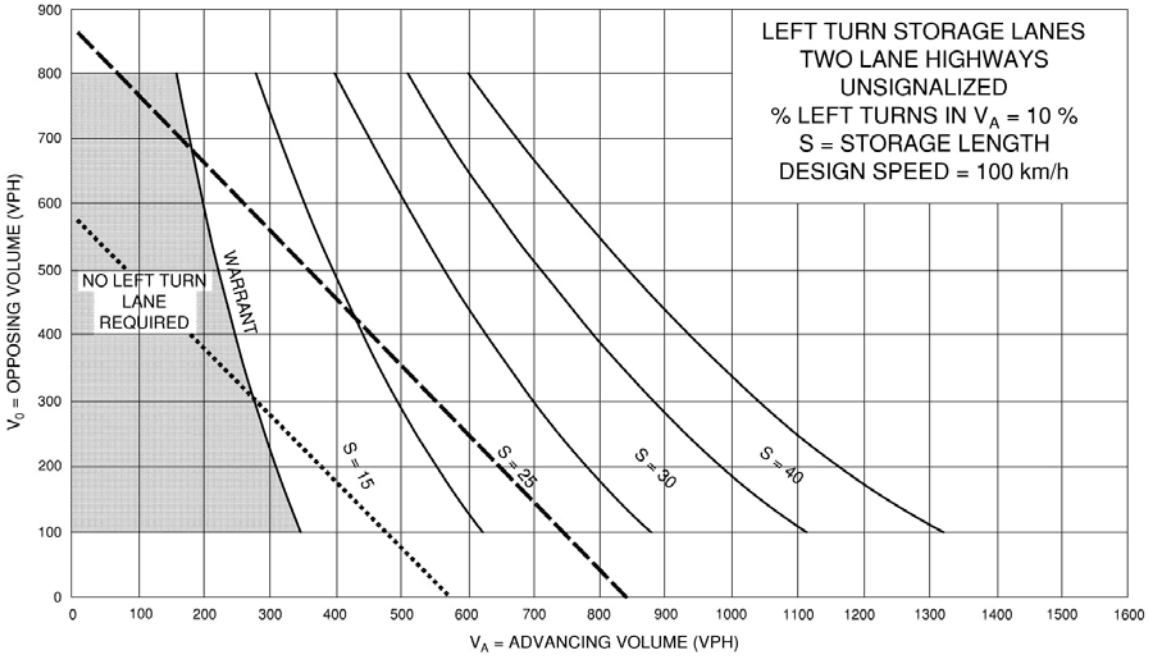
Exhibit 9A-22

Critical Case - PM Peak Hour



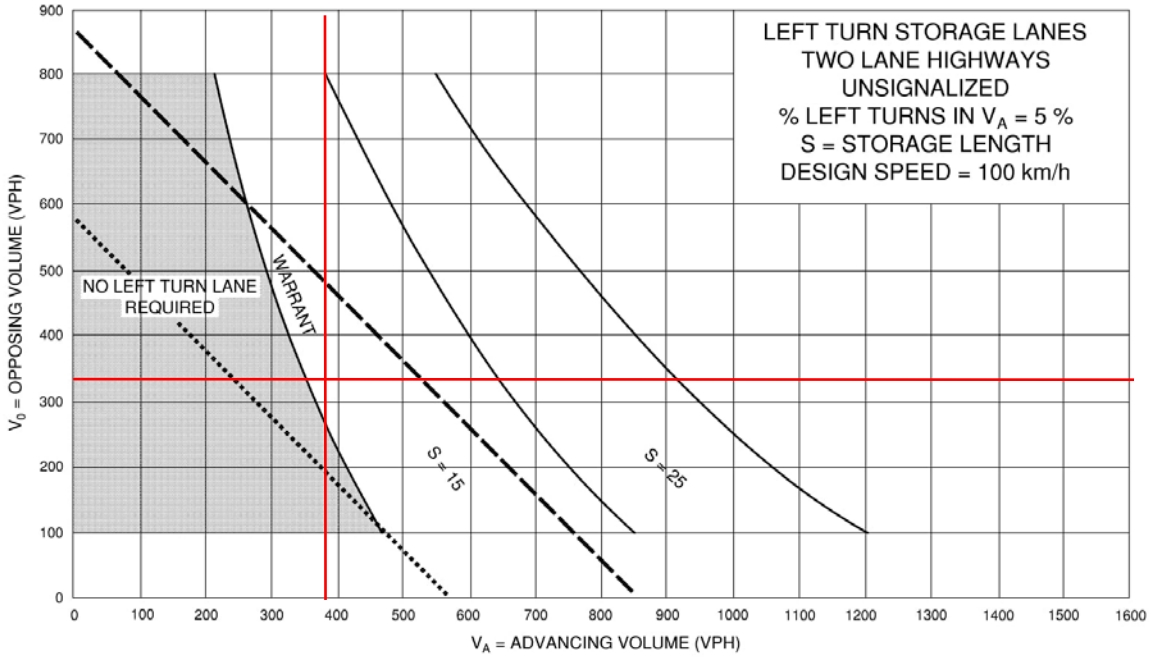
TRAFFIC SIGNALS MAY BE WARRANTED IN RURAL AREAS OR URBAN AREAS WITH RESTRICTED FLOW

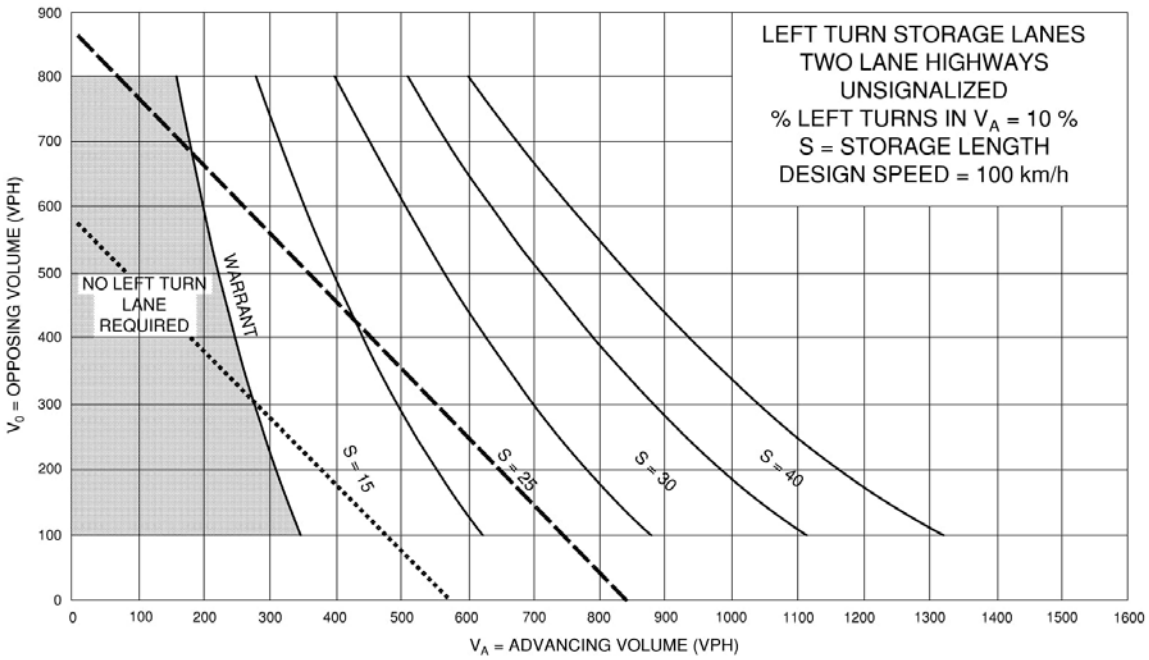
TRAFFIC SIGNALS MAY BE WARRANTED IN "FREE FLOW" URBAN AREAS



Highway 115 SB Ramp & Syer Line / County Road 10
2032 Background - Northbound
Critical Case - PM Peak Hour

Exhibit 9A-22

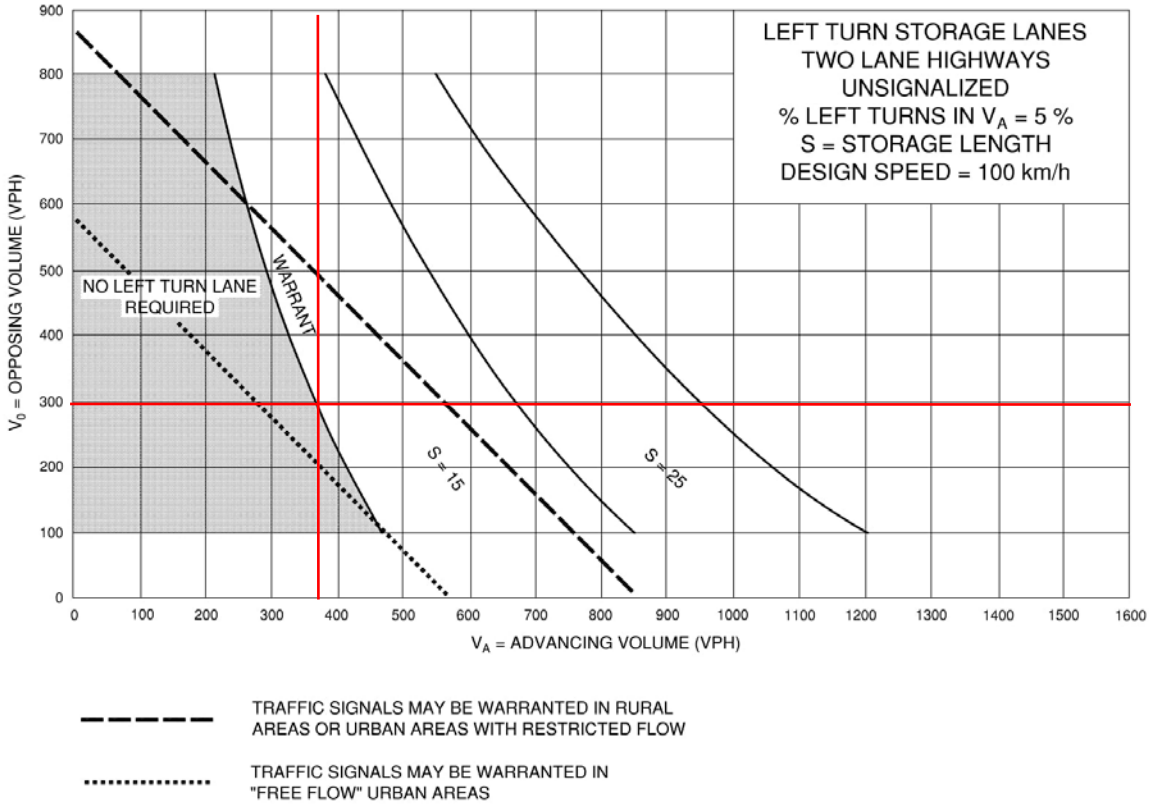


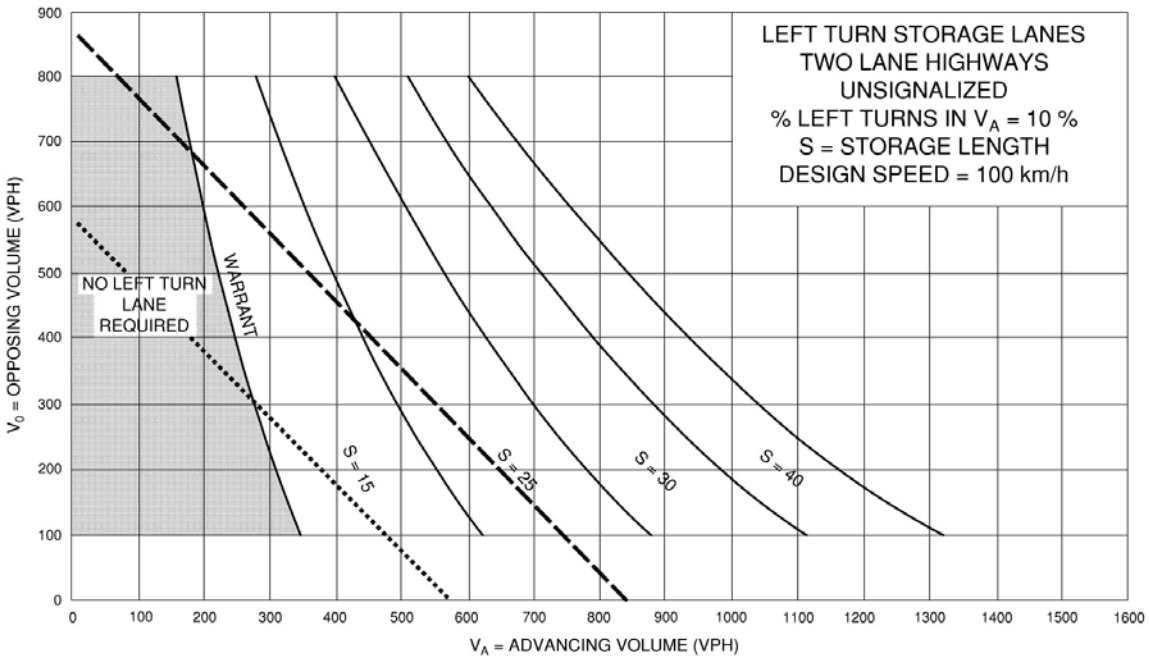


Highway 115 SB Ramp & Syer Line / County Road 10

2027 Total - Northbound **Exhibit 9A-22**

Critical Case - PM Peak Hour

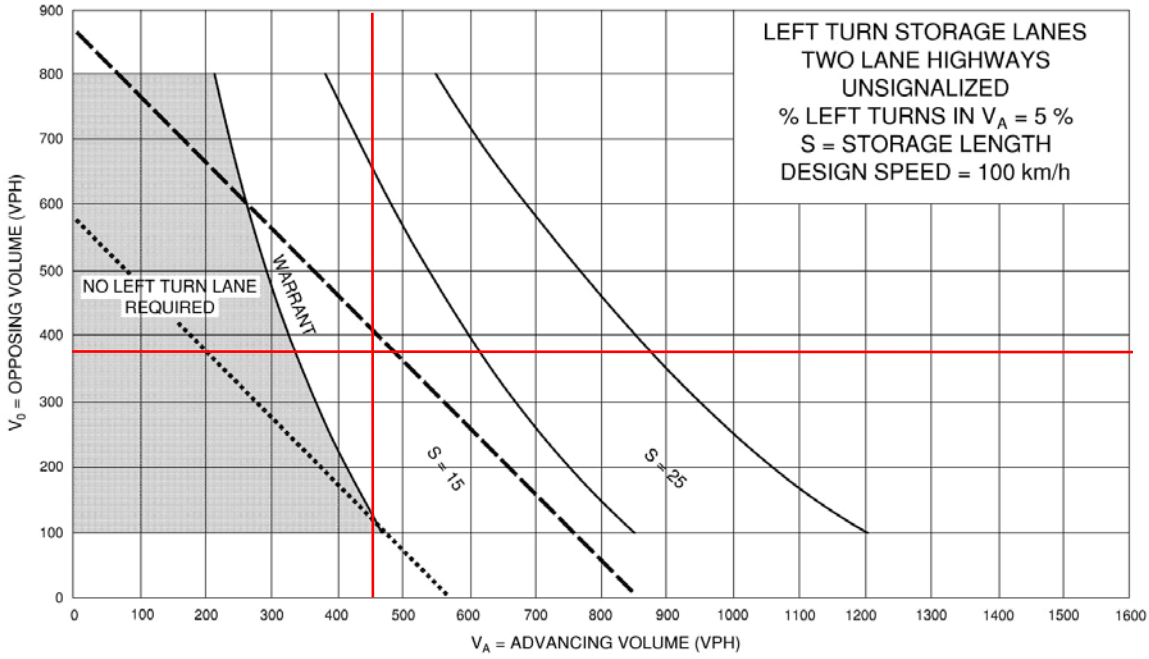




Highway 115 SB Ramp & Syer Line / County Road 10

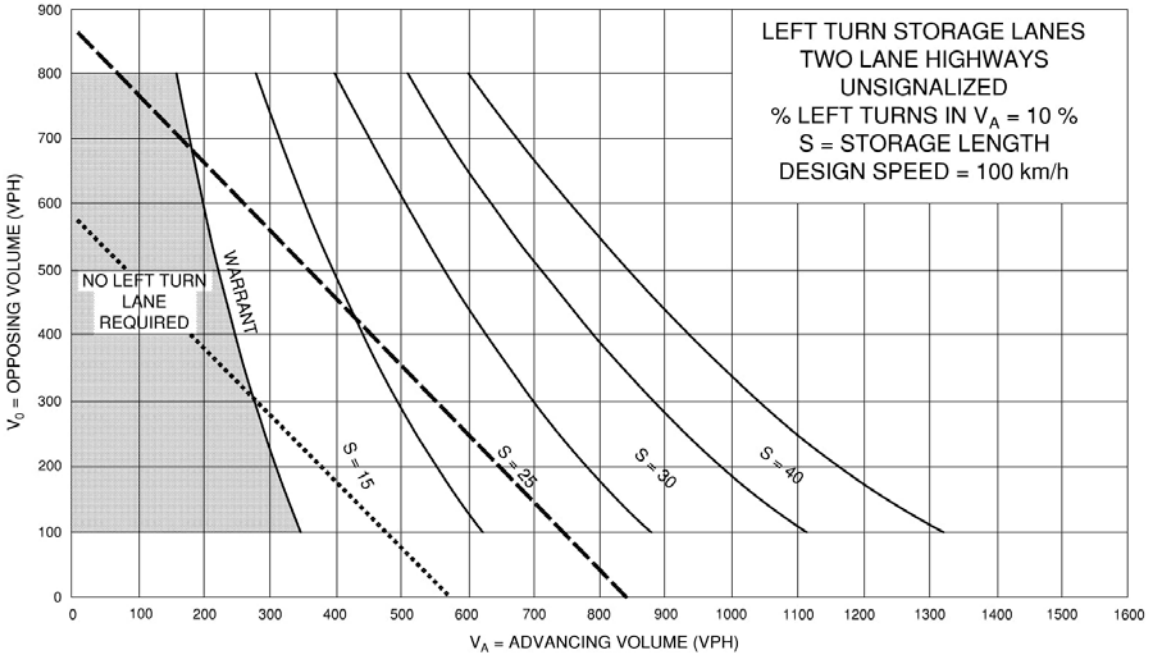
2037 Total - Northbound **Exhibit 9A-22**

Critical Case - PM Peak Hour



TRAFFIC SIGNALS MAY BE WARRANTED IN RURAL AREAS OR URBAN AREAS WITH RESTRICTED FLOW

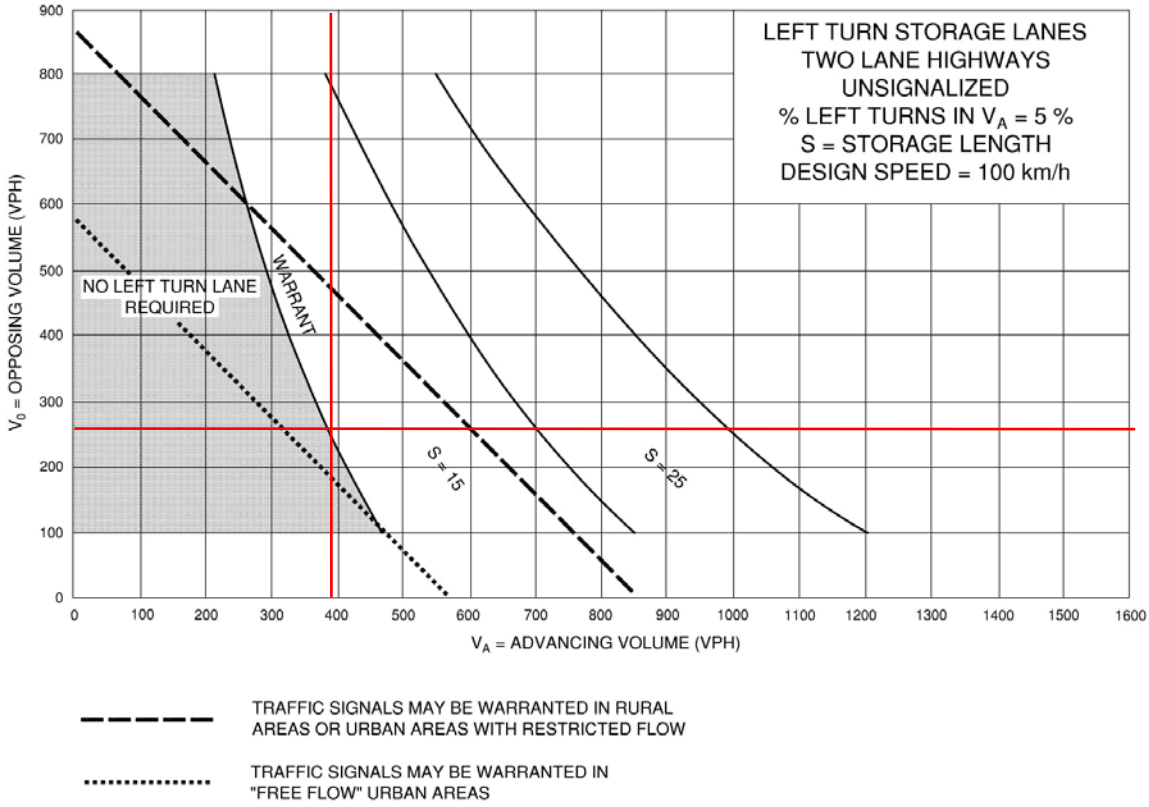
TRAFFIC SIGNALS MAY BE WARRANTED IN "FREE FLOW" URBAN AREAS

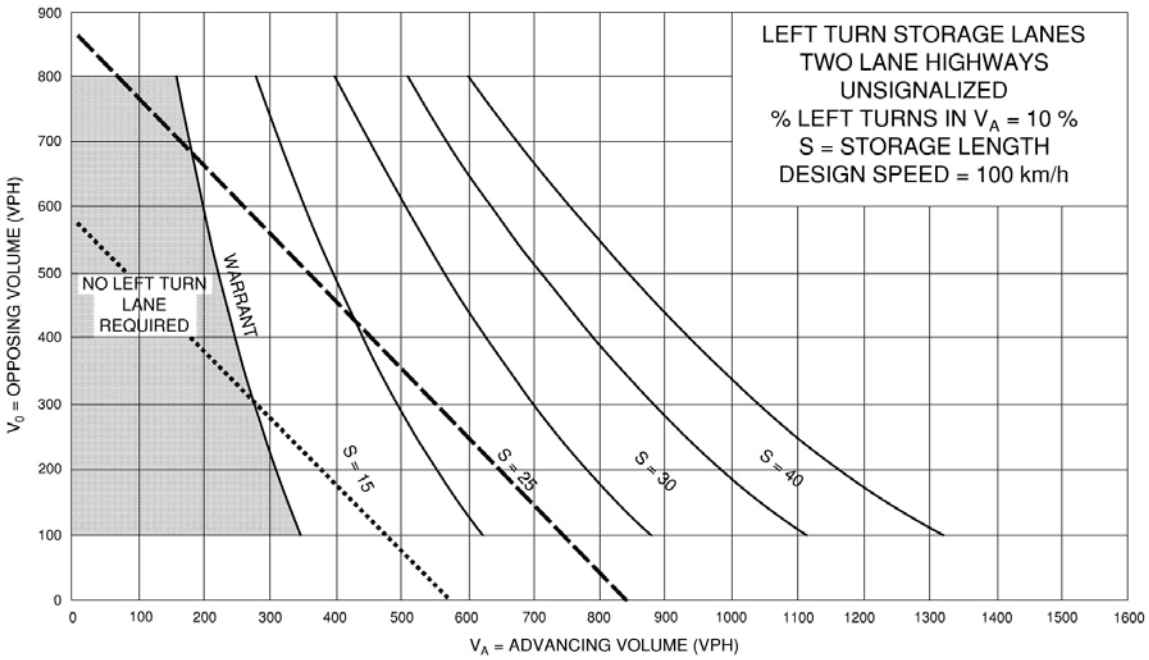


Highway 115 NB Ramp & Syer Line / County Road 10

2022 Existing - Southbound **Exhibit 9A-22**

Critical Case - PM Peak Hour

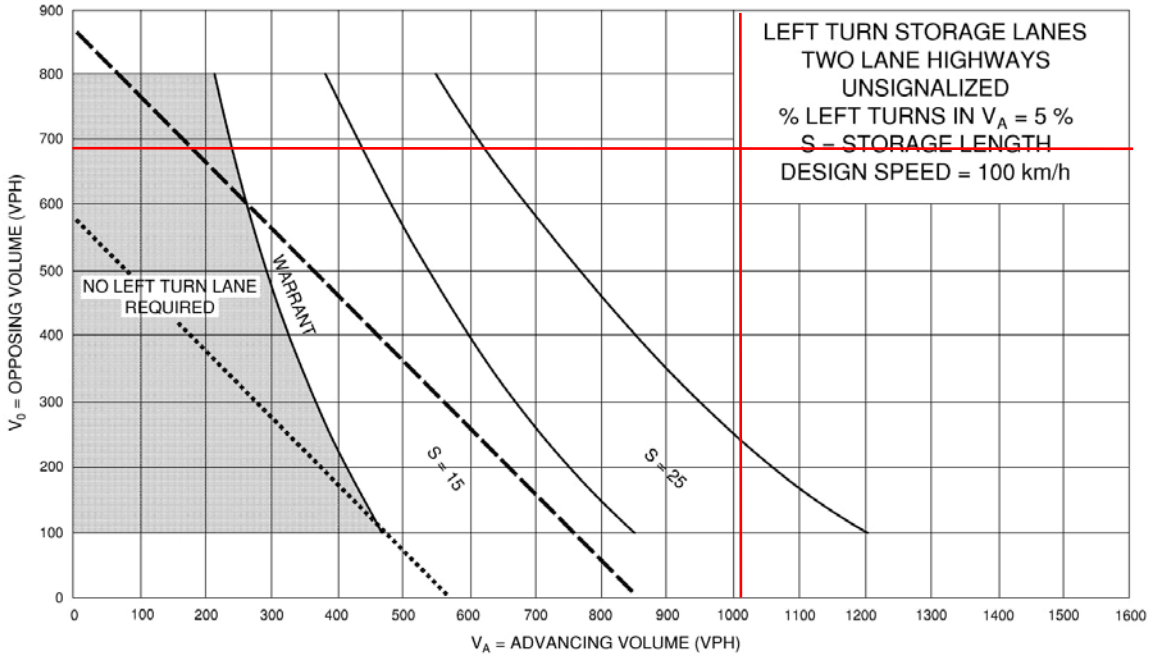




Highway 115 NB Ramp & Syer Line / County Road 10

2027 Total - Southbound **Exhibit 9A-22**

Critical Case - PM Peak Hour



TRAFFIC SIGNALS MAY BE WARRANTED IN RURAL AREAS OR URBAN AREAS WITH RESTRICTED FLOW

TRAFFIC SIGNALS MAY BE WARRANTED IN "FREE FLOW" URBAN AREAS

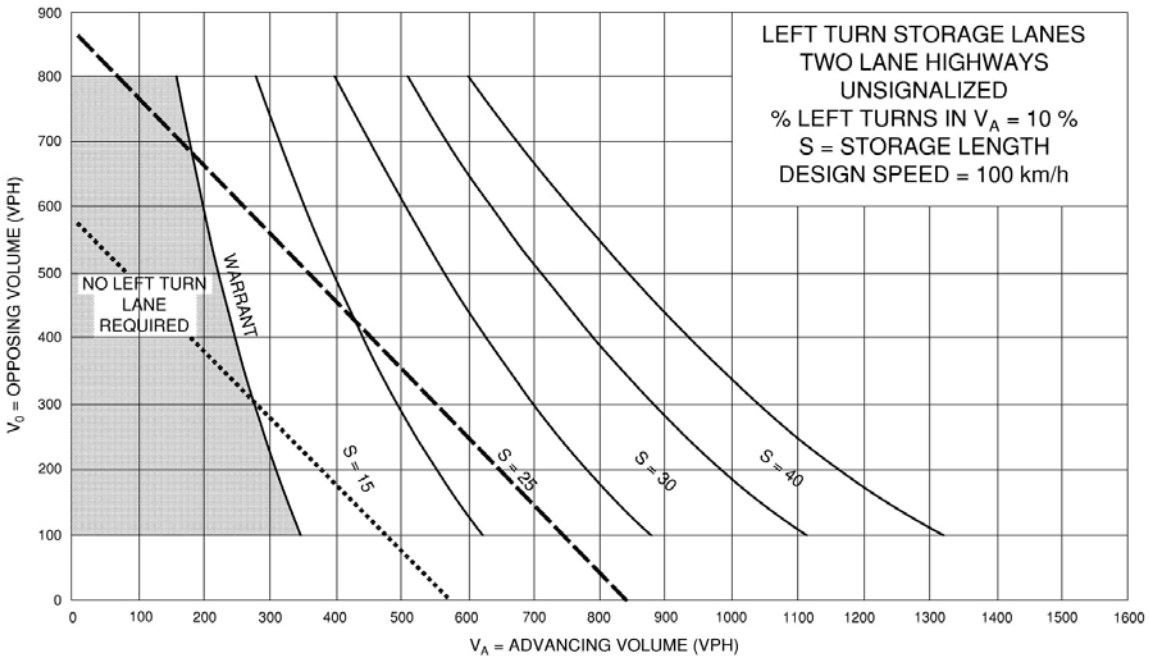
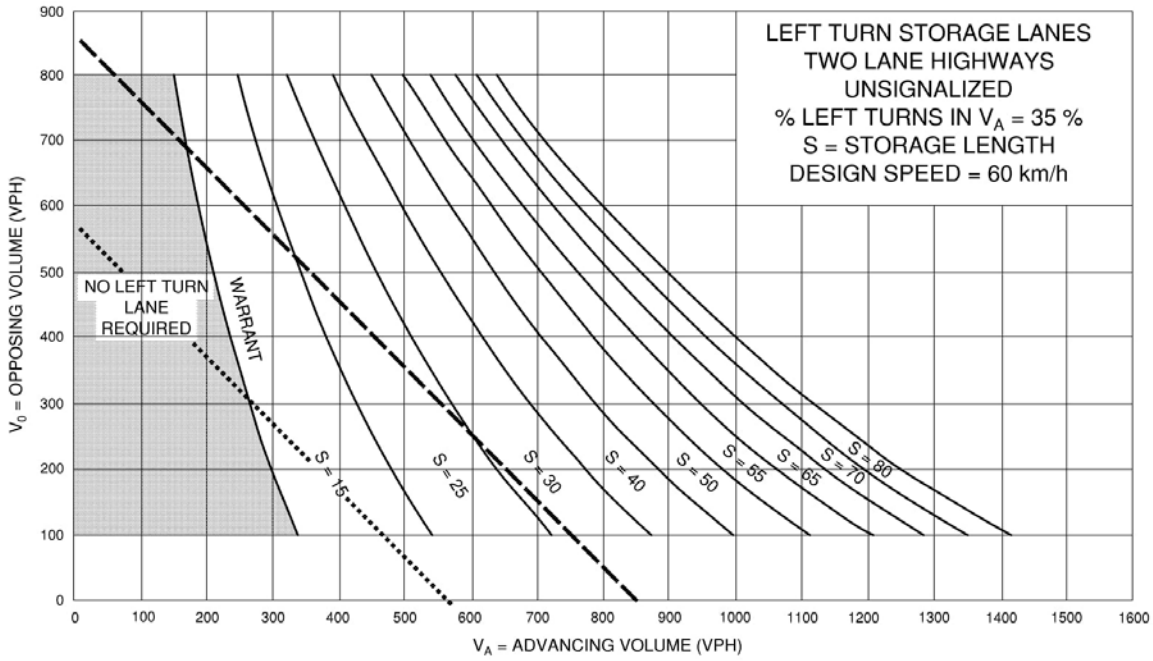
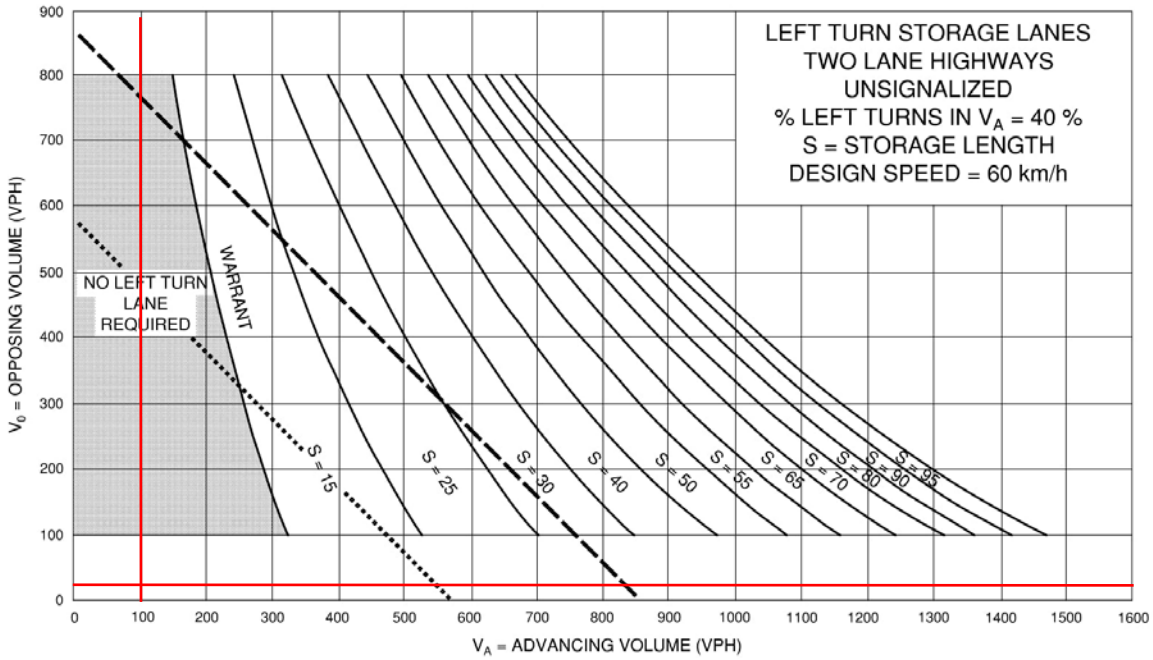


Exhibit 9A-9



Syer Line / Street A
2037 Total - Southbound
Critical Case - PM Peak Hour



Appendix H –
OTM Signal Justification Sheets

Justification No. 7 - 2027 Background Traffic

Highway 115 SB Ramp & Syer Line / County Road 10

Justification	Description		Compliance			Signal Warrant	Underground Provisions Warrant
			Sectional		Entire %		
		Free Flow	Numerical	%			
1. Minimum Vehicluar Volume	A. Vehicle volume, all aproaches (average hour)	480	558	116%	97%	NO	YES
	B. Vehicle volume, along minor streets (average hour)	120	263	219%		YES	YES
2. Delay to cross traffic	A. Vehicle volume, major street (average hour)	480	272	57%	47%	NO	NO
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)	50	240	481%		YES	YES

Justification No. 7 - 2037 Total Traffic

Highway 115 SB Ramp & Syer Line / County Road 10

Justification	Description		Compliance			Signal Warrant	Underground Provisions Warrant
			Sectional		Entire %		
		Rest. Flow	Numerical	%			
1. Minimum Vehicluar Volume	A. Vehicle volume, all aproaches (average hour)	480	703	147%	122%	YES	YES
	B. Vehicle volume, along minor streets (average hour)	120	324	270%		YES	YES
2. Delay to cross traffic	A. Vehicle volume, major street (average hour)	480	350	73%	61%	NO	NO
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)	50	292	584%		YES	YES

Justification No. 7 - 2027 Background Traffic

Highway 115 NB Ramp & Syer Line / County Road 1(

Justification	Description		Compliance			Signal Warrant	Underground Provisions Warrant
			Sectional		Entire %		
		Free Flow	Numerical	%			
1. Minimum Vehicluar Volume	A. Vehicle volume, all aproaches (average hour)	480	753	157%	51%	YES	YES
	B. Vehicle volume, along minor streets (average hour)	120	73	61%		NO	NO
2. Delay to cross traffic	A. Vehicle volume, major street (average hour)	480	662	138%	77%	YES	YES
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)	50	46	93%		NO	NO

Justification No. 7 - 2037 Total Traffic

Highway 115 NB Ramp & Syer Line / County Road 1(

Justification	Description		Compliance			Signal Warrant	Underground Provisions Warrant
			Sectional		Entire %		
		Rest. Flow	Numerical	%			
1. Minimum Vehicluar Volume	A. Vehicle volume, all aproaches (average hour)	480	937	195%	80%	YES	YES
	B. Vehicle volume, along minor streets (average hour)	120	115	96%		NO	NO
2. Delay to cross traffic	A. Vehicle volume, major street (average hour)	480	793	165%	121%	YES	YES
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)	50	72	145%		YES	YES

Justification No. 7 - 2027 Background Traffic

Syer Line / Street A

Justification	Description		Compliance			Signal Warrant	Underground Provisions Warrant
			Sectional		Entire %		
		Rest. Flow	Numerical	%			
1. Minimum Vehicluar Volume	A. Vehicle volume, all aproaches (average hour)	720	70	10%	5%	NO	NO
	B. Vehicle volume, along minor streets (average hour)	255	20	8%		NO	NO
2. Delay to cross traffic	A. Vehicle volume, major street (average hour)	720	49	7%	0%	NO	NO
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)	75	1	1%		NO	NO

Appendix I –
Transportation Tomorrow Survey – Excerpt

Residential Distribution
Fri Feb 11 2022 15:42:07 GMT-0500 (Eastern Standard Time) - Run Time: 2702ms Cross Tabulation Query Form - Trip - 2016 v1.1 Row: Planning district of origin - pd_orig Column: Planning district of destination - pd_dest   Filters: (Planning district of destination - pd_dest In 104); and (Start time of trip - start_time In 700 - 900); and (Trip purpose of destination - purp_dest In W, R) Trip 2016 ROW : pd_orig COLUMN : pd_dest

TTS Cross Tabulation

Cross Tabulation Query Form - Trip - 2016 v1.1

Filter Variables

Planning district of origin × ▾ | Planning district of desti... × ▾ | (Optional) Table Attribute ▾

Group Attributes

Row Grouping | Column Grouping | Table Grouping

Grouping file: Choose File No file chosen

Filter Selection +

☐ Planning district of destination ▾ In ▾

104

And ▾

☐ Start time of trip ▾ In ▾

700 - 900

And ▾

☐ Trip purpose of destination ▾ In ▾

W, R

Add Delete

Output

◉ Comma-delimited table ○ Column format Expansion Factor On Click to Select Load Load

Execute Query Select All Save As

```
Mon Mar 21 2022 17:47:25 GMT-0400 (Eastern Daylight Time) - Run Time: 2644ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Planning district of origin - pd_orig
Column: Planning district of destination - pd_dest


Filters:
Planning district of destination - pd_dest In 104
and
Start time of trip - start_time In 700 - 900
and
Trip purpose of destination - purp_dest In W, R

Trip 2016
Table:

,Cavan Monaghan
Ajax,11
Oshawa,26
Clarington,63
Kawartha Lakes,260
Peterborough,669
Cavan Monaghan,204
Otonabee-South Monaghan,128
Asphodel-Norwood,5
Dummer-Douro,40
Selwyn,95
```

Employment Distribution
Tue Feb 15 2022 16:33:06 GMT-0500 (Eastern Standard Time) - Run Time: 2537ms Cross Tabulation Query Form - Trip - 2016 v1.1 Row: Planning district of destination - pd_dest Column: Planning district of origin - pd_orig   Filters: (Planning district of origin - pd_orig In 104,); and (Start time of trip - start_time In 700 - 900); and (Trip purpose of destination - purp_dest In W, R) Trip 2016 ROW : pd_dest COLUMN : pd_orig

TTS Cross Tabulation

Cross Tabulation Query Form - Trip - 2016 v1.1

Filter Variables

Planning district of desti... × | Planning district of origin × | (Optional) Table Attribute

Group Attributes

Row Grouping | Column Grouping | Table Grouping

Grouping file: Choose File No file chosen

Filter Selection +

Planning district of origin | In

104

And

Start time of trip | In

700 - 900

And

Trip purpose of destination | In

W, R

Add | Delete

Output

Comma-delimited table | Column format | Expansion Factor On | Click to Select Load | Load

Execute Query | Select All | Save As

```
Mon Mar 21 2022 17:50:10 GMT-0400 (Eastern Daylight Time) - Run Time: 2479ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Planning district of destination - pd_dest
Column: Planning district of origin - pd_orig


Filters:
Planning district of origin - pd_orig In 104
and
Start time of trip - start_time In 700 - 900
and
Trip purpose of destination - purp_dest In W, R

Trip 2016
Table:

,Cavan Monaghan
PD 1 of Toronto,35
PD 16 of Toronto,37
Ajax,26
Whitby,27
Oshawa,36
Clarington,152
Whitchurch-Stouffville,39
Mississauga,39
Kawartha Lakes,41
Peterborough,1122
Cavan Monaghan,204
Otonabee-South Monaghan,20
Asphodel-Norwood,11
Selwyn,39
Hastings,45
External,5
```