# Syer Line Industrial

## Township of Cavan Monaghan
## County of Peterborough

### Traffic Impact Study Update for

### SLIP DEVCO INC.

**Type of Document:**
Final Report

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JDE – 21179

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# Legal Notification

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# Executive Summary

This traffic impact study update was prepared in support of the proposed industrial development [Subject Site], 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 Subject Site includes 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 123 AM and 112 PM peak hour trips.
2. Detailed turning movement traffic and pedestrian counts were completed at the intersections of Highway 115 SB Ramp & Syer Line / County Road 10 and Highway 115 NB Ramp & Syer Line / County Road 10, on Wednesday, March 1st, 2023.
3. An intersection operation analysis was completed at the study area intersections, using the existing (2023) and background (2028, 2033 and 2038) 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 (2028) 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 (2033) 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 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.
     - Widen SB Off-Ramp for the construction of an eastbound left turn lane with a 60 metre storage length, 40 parallel length and 100 metre taper length.
     - Extend the northbound left turn lane to provide a 230 metre storage length.

**Long-Range Planning (Post 2033)**

- Highway 115 NB Ramp & Syer Line / County Road 10
  - Twin the northbound left turn lane on County Road 10
  - Construct a second northbound on-ramp 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 (2028, 2033 and 2038) 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 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 (anticipated to start in the existing (2023) year), to determine the specific timing for the recommended infrastructure improvements noted for the 2028 and 2033 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

**SLIP DEVCO INC.** [The Client] is proposing to develop a property [Subject Site], 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 industrial subdivision will consist of 5 Blocks and is anticipated to include a total of 225 employees.

The proposed development includes one full-movement access roadway onto Syer Line [Street A]. One Block within the industrial subdivision (Block 5) will not have access via Street A. This Block will have frontage on Syer Line; however, the plan for accessing this Block has not been finalized at this time and will be subject to a future traffic review.

**JD Northcote Engineering Inc.** [JD Engineering] completed a traffic impact study [TIS] for the Subject Site (dated March 2022) [Syer TIS]. This report is an update to the Syer TIS which was based on a preliminary concept plan for the Subject Site.

The Client has retained JD Engineering to prepare this Traffic Impact Study Update in support of the development application for the proposed industrial development.

## 1.2 Study Area

**Figure 1** shows the location of the Subject Site and study area intersections in relation to the surrounding area. The Concept Plan is provided in **Appendix A**.

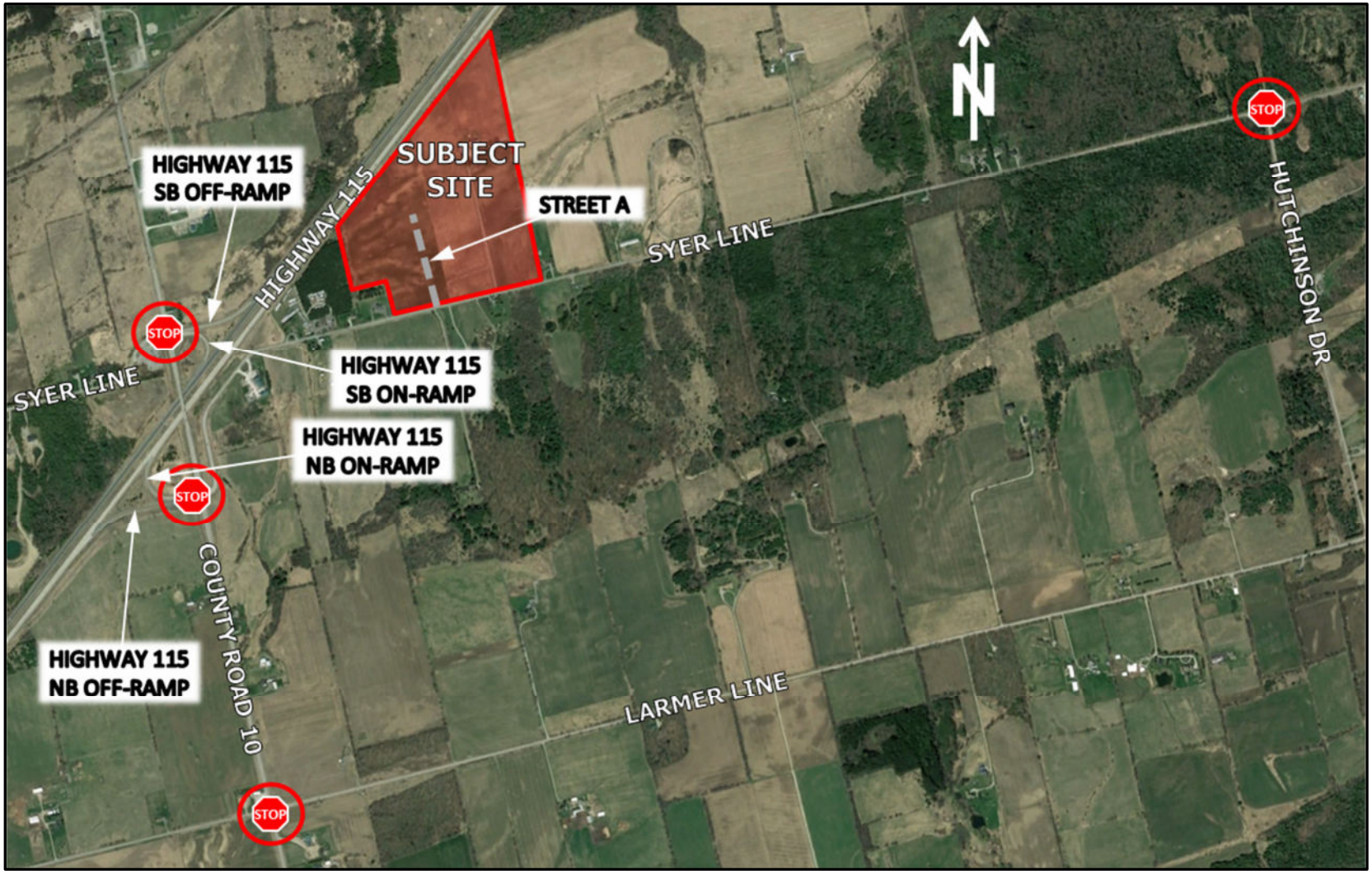
It is noted, the Concept Plan illustrates lots on the southeast and southwest corners of the proposed development that are also owned by the Client. These lots are not a part of this application but were reviewed as part of a consent application submitted prior to the completion of this report.

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.

The following intersections, which were included in the Syer TIS, are included in this traffic impact study update:

- 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 (2023) and horizon years (2028, 2033 & 2038) 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

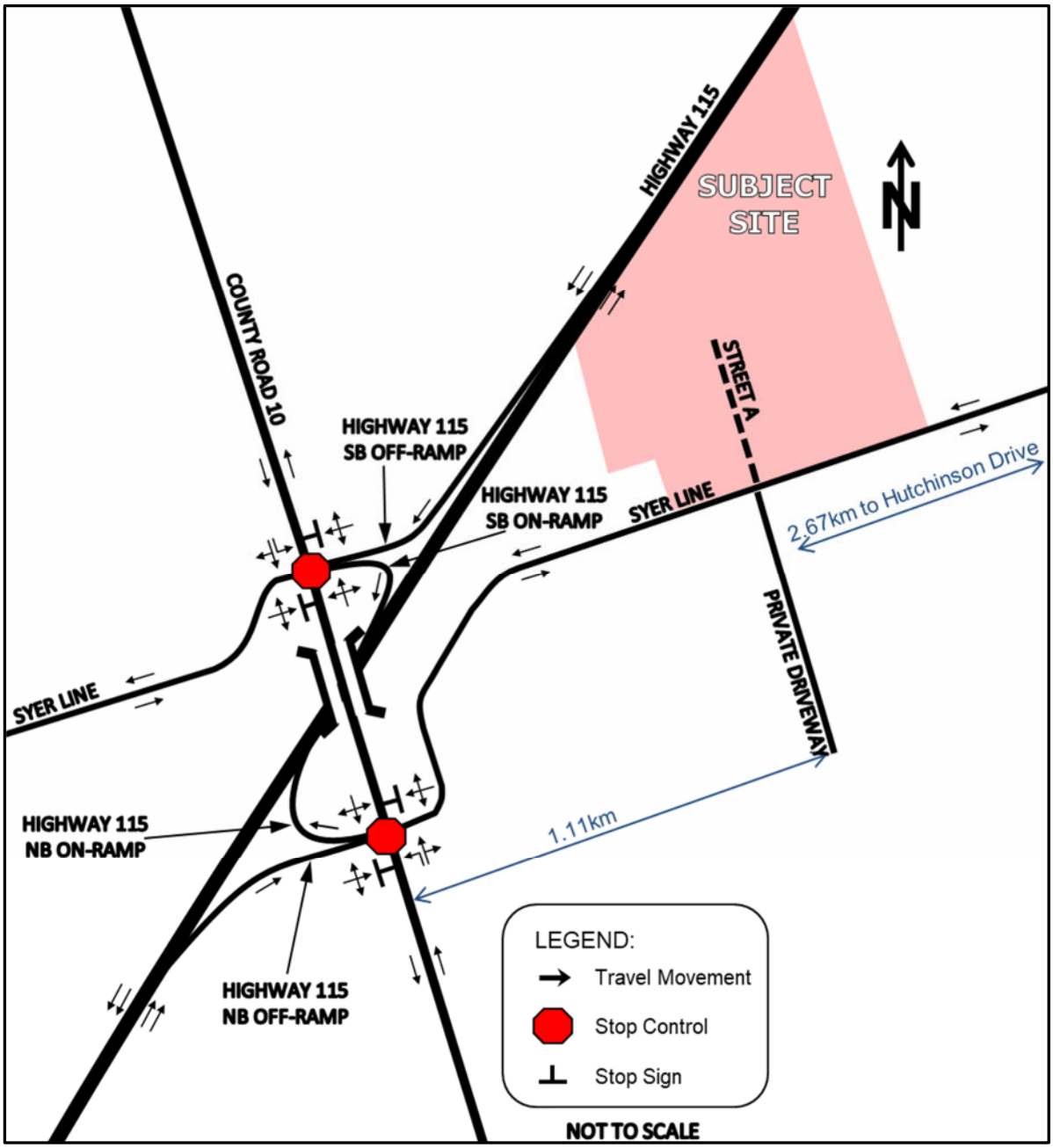
***Highway 115*** is a four-lane Class 1B freeway provincial highway with a rural cross-section. Highway 115 has a posted speed limit of 100km/h and is under jurisdiction of the Ontario Ministry of Transportation [MTO]. The Highway 115 on and off ramps (for both northbound and southbound directions) 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 (2023) 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 (2023), 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

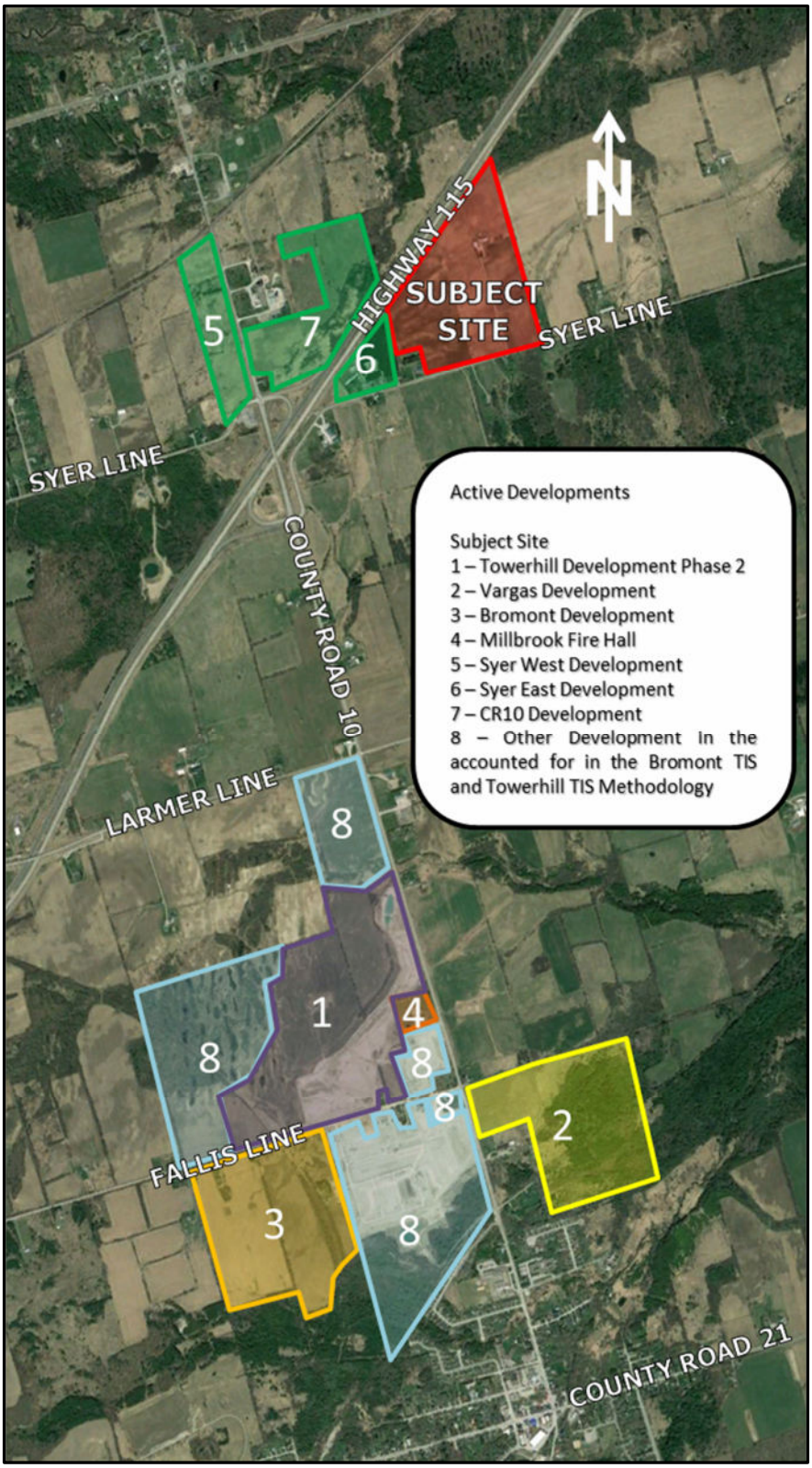
Based on discussions with Township staff, the following developments are planned in the study area:

- 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 2033 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 approved and currently under construction. It is anticipated Towerhill Developments Phase 2 will be fully built-out by 2028.

For the future (2028, 2033 and 2038) scenarios, the traffic assignment for the Towerhill Developments Phase 2 is based on the traffic projections from the Bromont TIS, which is further discussed in Section 2.4.3. The traffic projections in the Bromont TIS applied the assumptions form 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 2028 and 2033 / 2038 horizon year, respectively.

The study area of this report extends beyond the study area included in the Bromont Development. The distribution of the Bromont Developent traffic within the study area of this report has been estimated based on the 2016 Transportation Tomorrow Survey [TTS] data. The TTS data for the Township was 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 Bromont, Towerhill Phase 2 and Vargas Developments, 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 from beyond the study area and only a small portion will access Highway 115 via the interchange in the study area.
** Outside of the study area.

The Bromont TIS included traffic assignment for the Towerhill Developments Phase 2 and the Vargas Development. For the purposes of this study, the traffic assignment for the Towerhill Developments Phase 2, Vargas Development and other minor development in the Millbrook community have been estimated based on the Bromont TIS traffic projections (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 2028 and 2033 / 2038 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 2028.

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.**

[1] The traffic assignment was determined by taking the difference between 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 2028 traffic volumes, we have assumed linear growth based on the background (2025 & 2030) traffic volumes.

**Table 2 – Fire Hall Traffic Distribution**

| 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.

### 2.4.5 Syer West Development, Syer East Development & CR10 Development

There are a number of rural properties zoned for employment 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 2033.

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 2038.

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 2038.

For the above-noted properties, a development density of 5 jobs per hectare was used, which is consistent with the development density proposed for the Subject Site.

The traffic generation for the Syer West Development, Syer East Development & CR10 Development was estimated 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 2028, 2033 and 2038 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 (2028)**

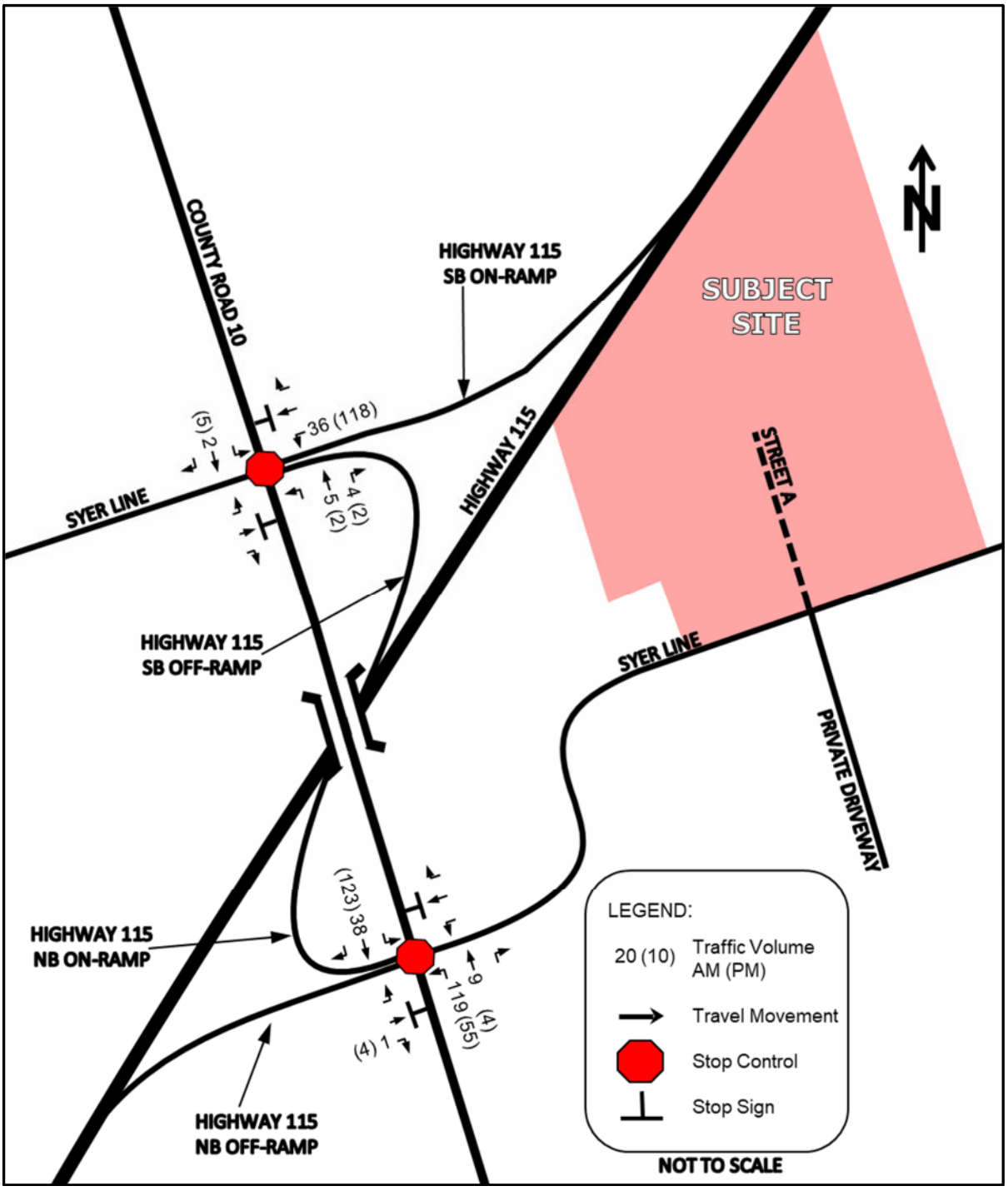


**Figure 5 – Adjacent Development – Bromont Development Traffic Volumes (2033 / 2038)**

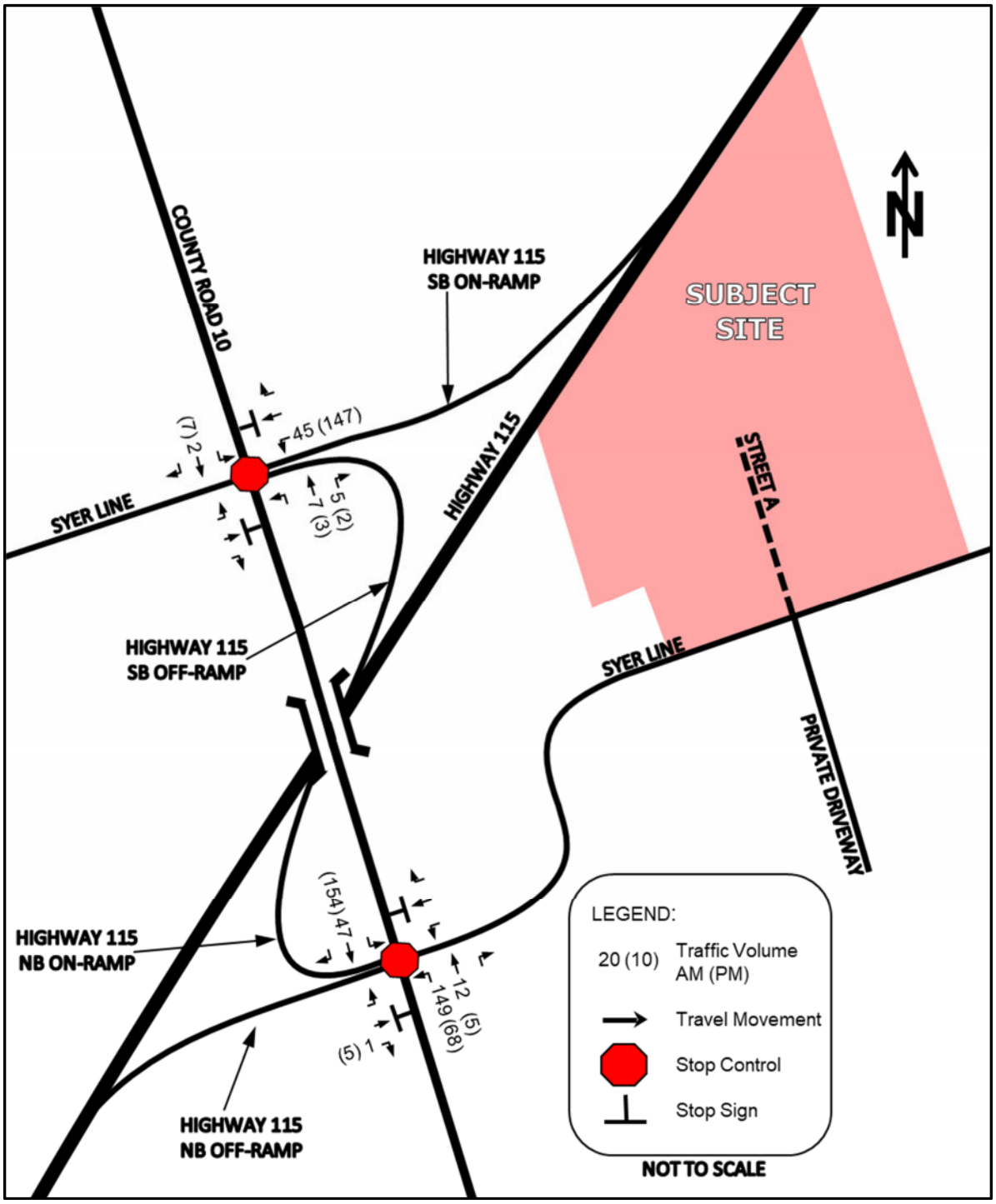
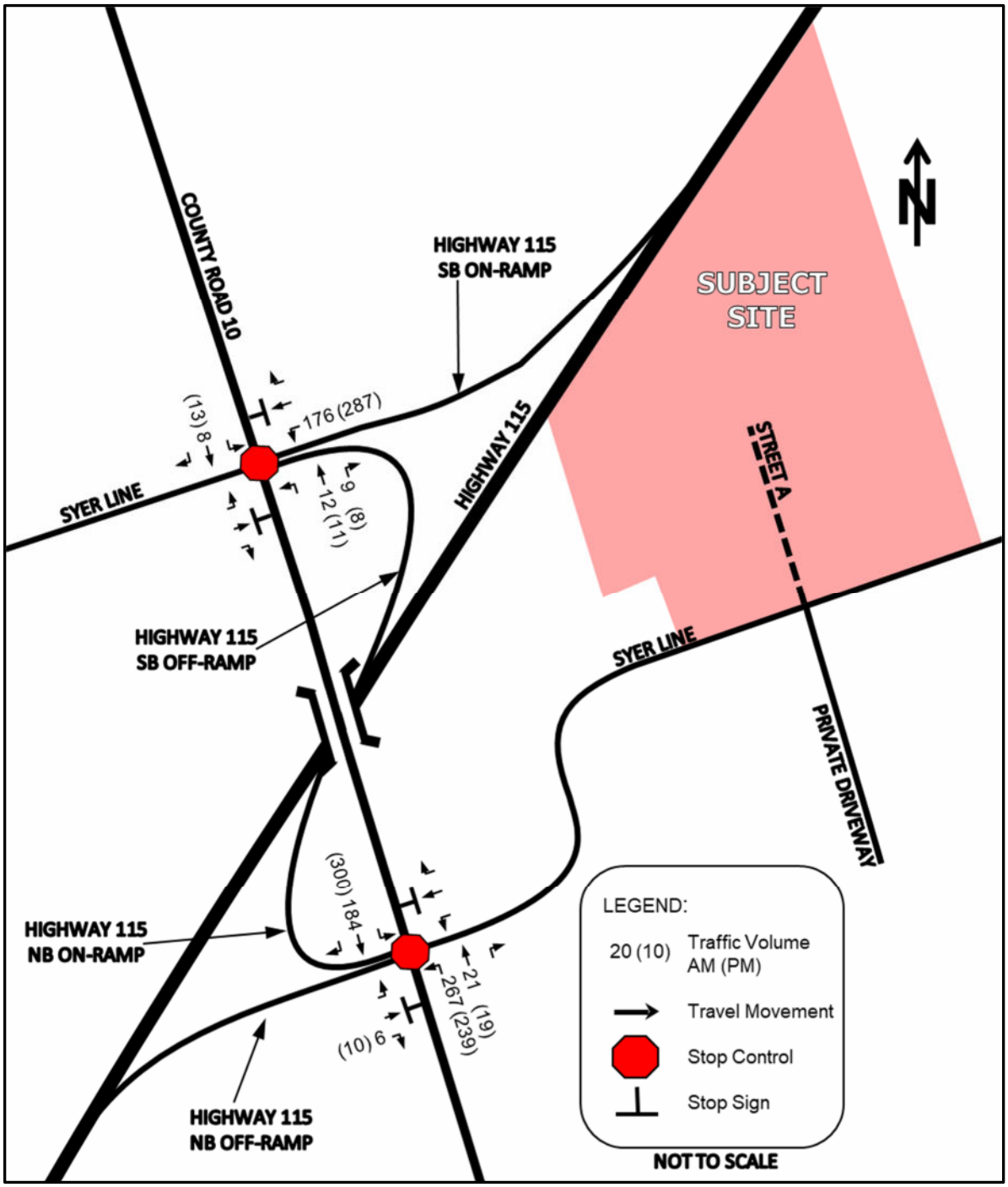


**Figure 6 – Adjacent Development (Bromont TIS[2]) Traffic Volumes (2028)**




[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 (2033 / 2038)**

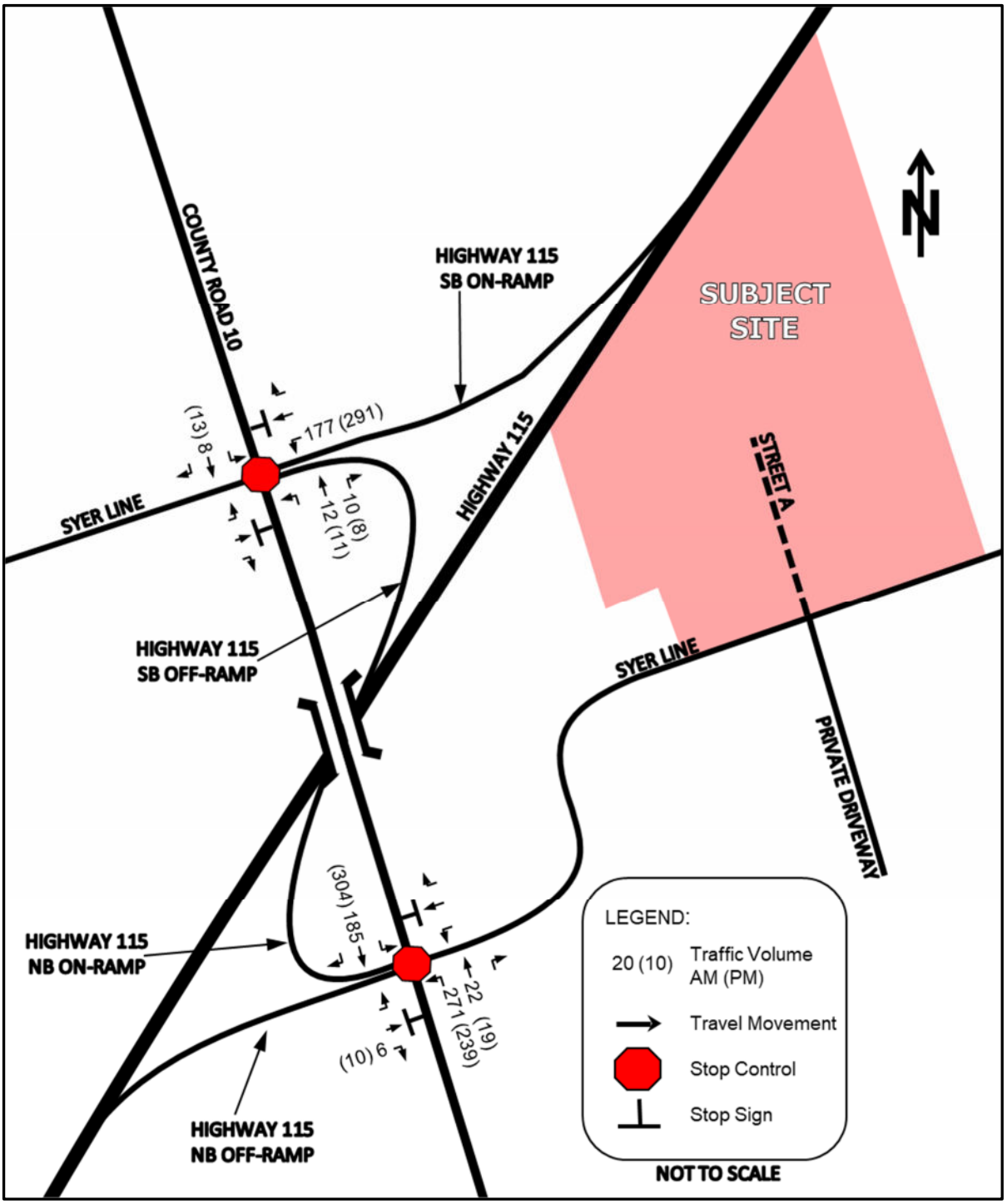


**Figure 8 – Adjacent Development – Millbrook Fire Hall Traffic Volumes (2028)**

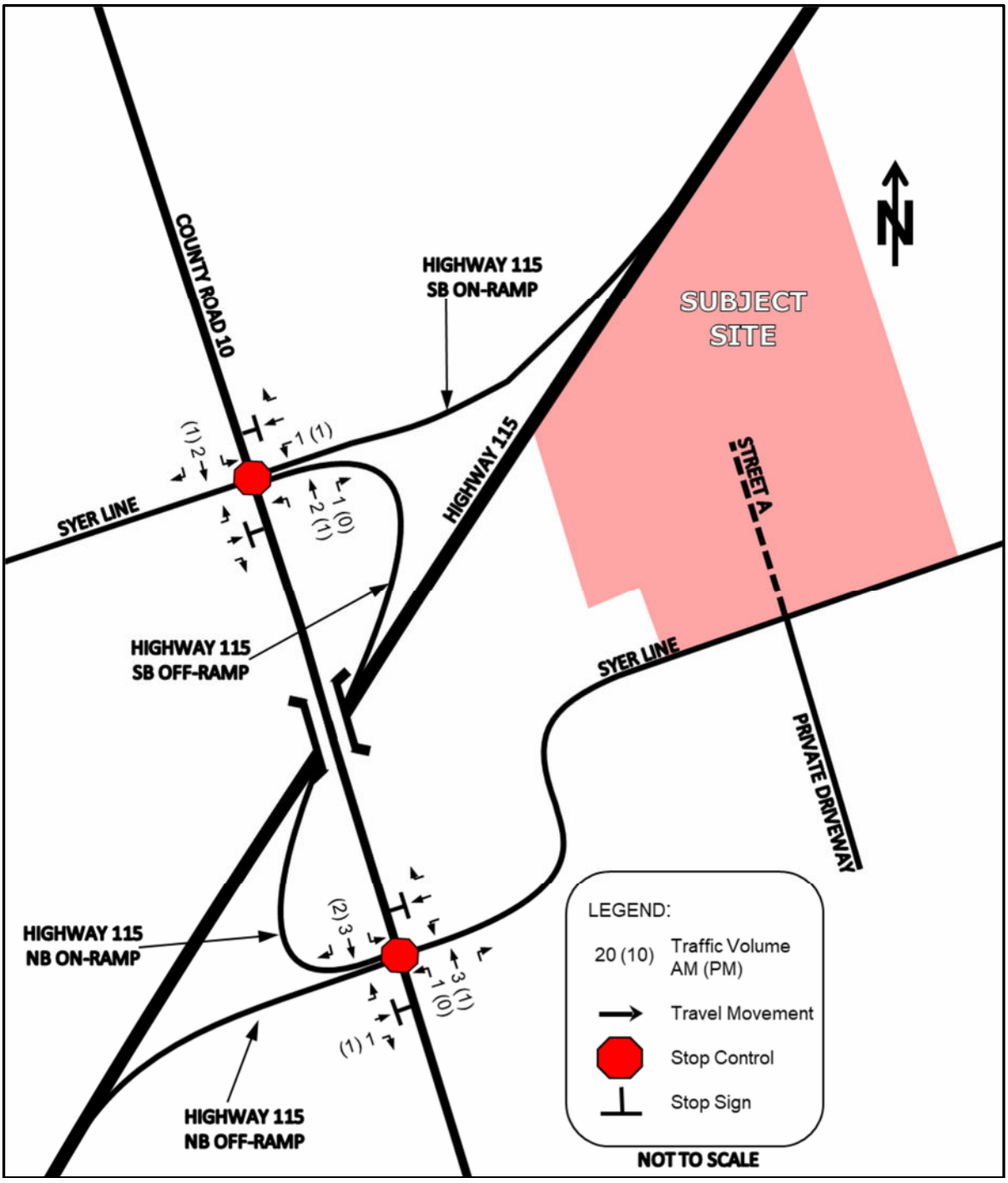


**Figure 9 – Adjacent Development – Syer West Development Traffic Volumes (2033)**

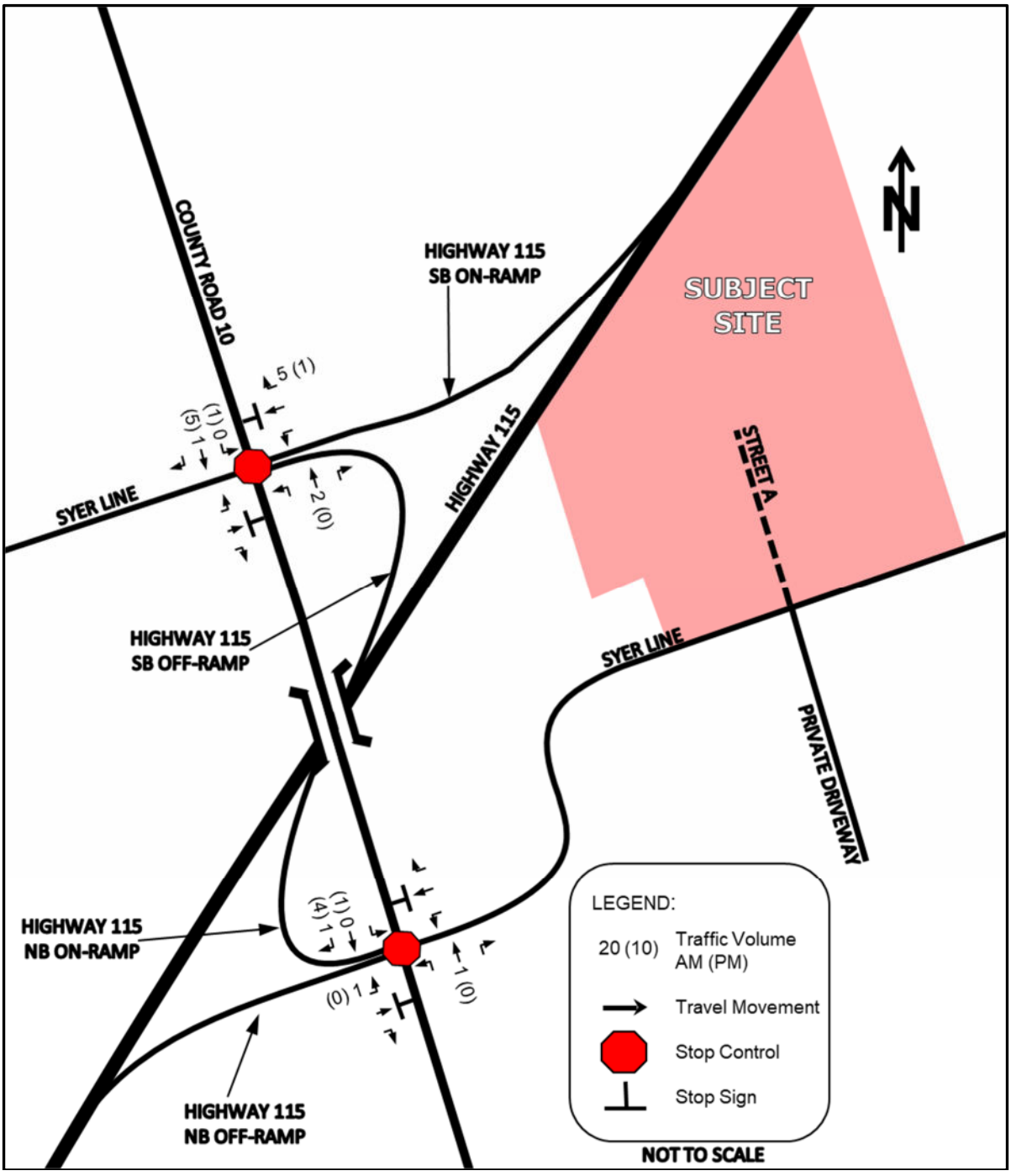


**Figure 10 – Adjacent Development – Syer East Development Traffic Volumes (2038)**

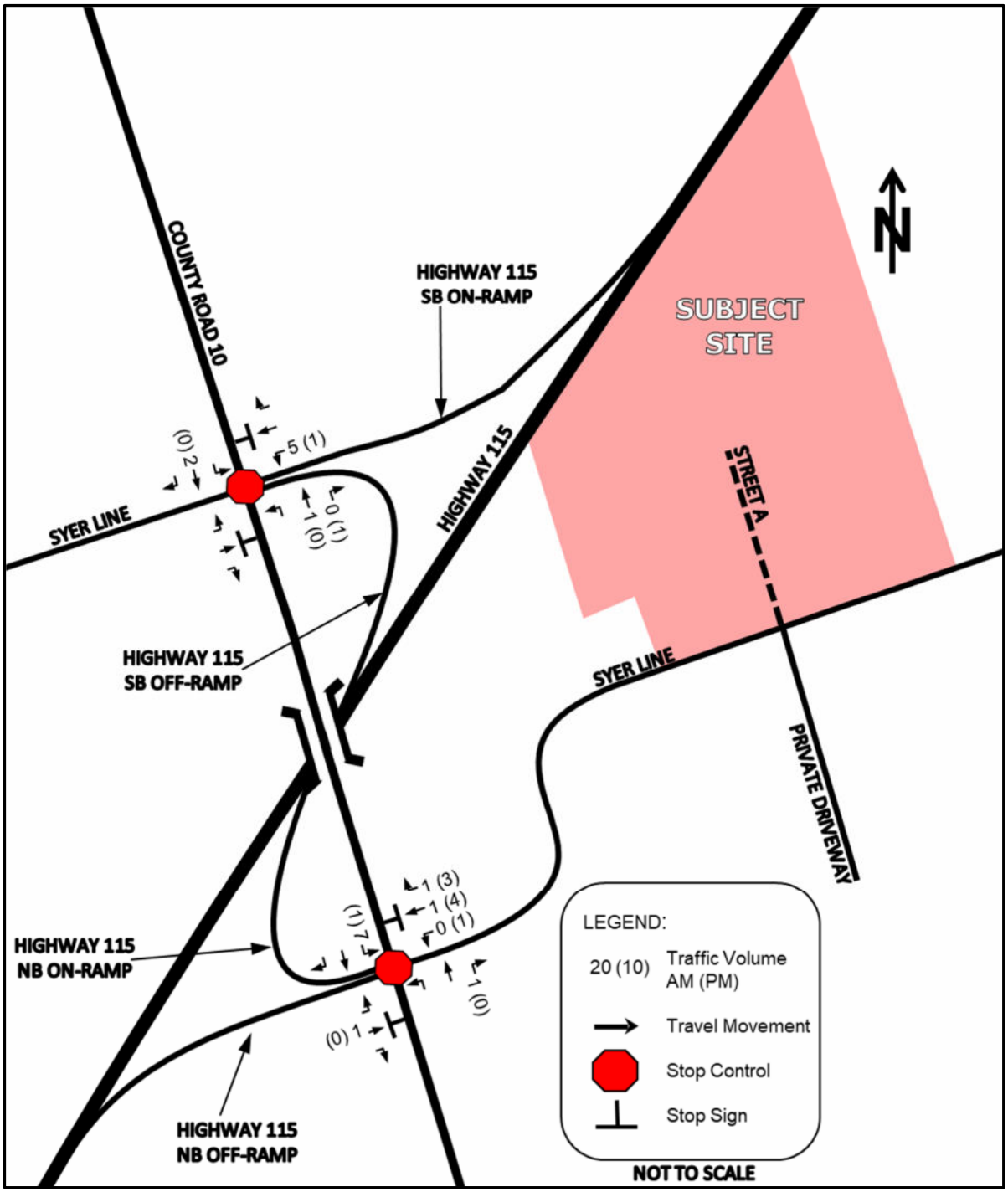


**Figure 11 – Adjacent Development – CR10 Development Traffic Volumes (2038)**

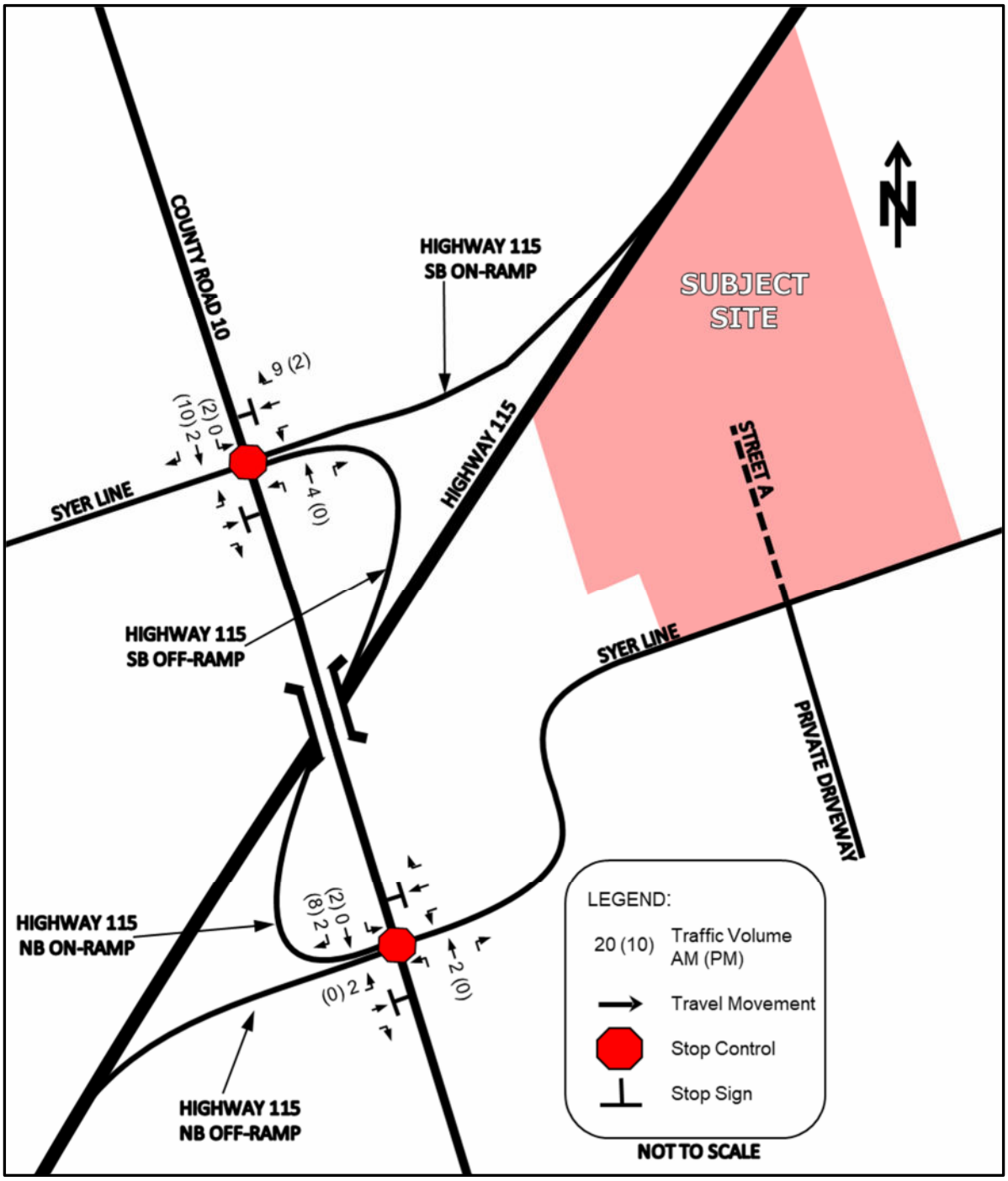


**Figure 12 – Total Net Adjacent Development Traffic Volumes (2028)**

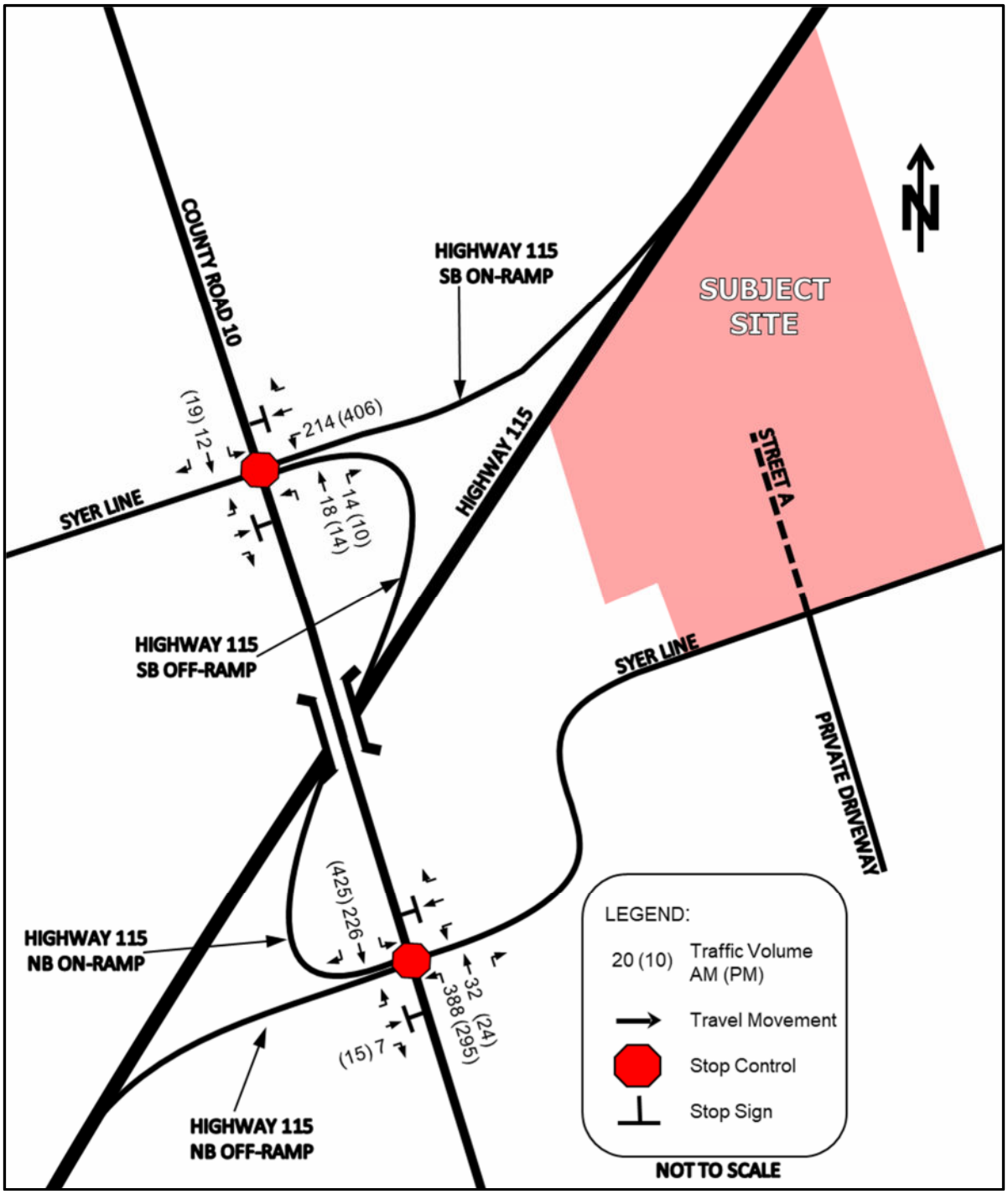


**Figure 13 – Total Net Adjacent Development Traffic Volumes (2033)**

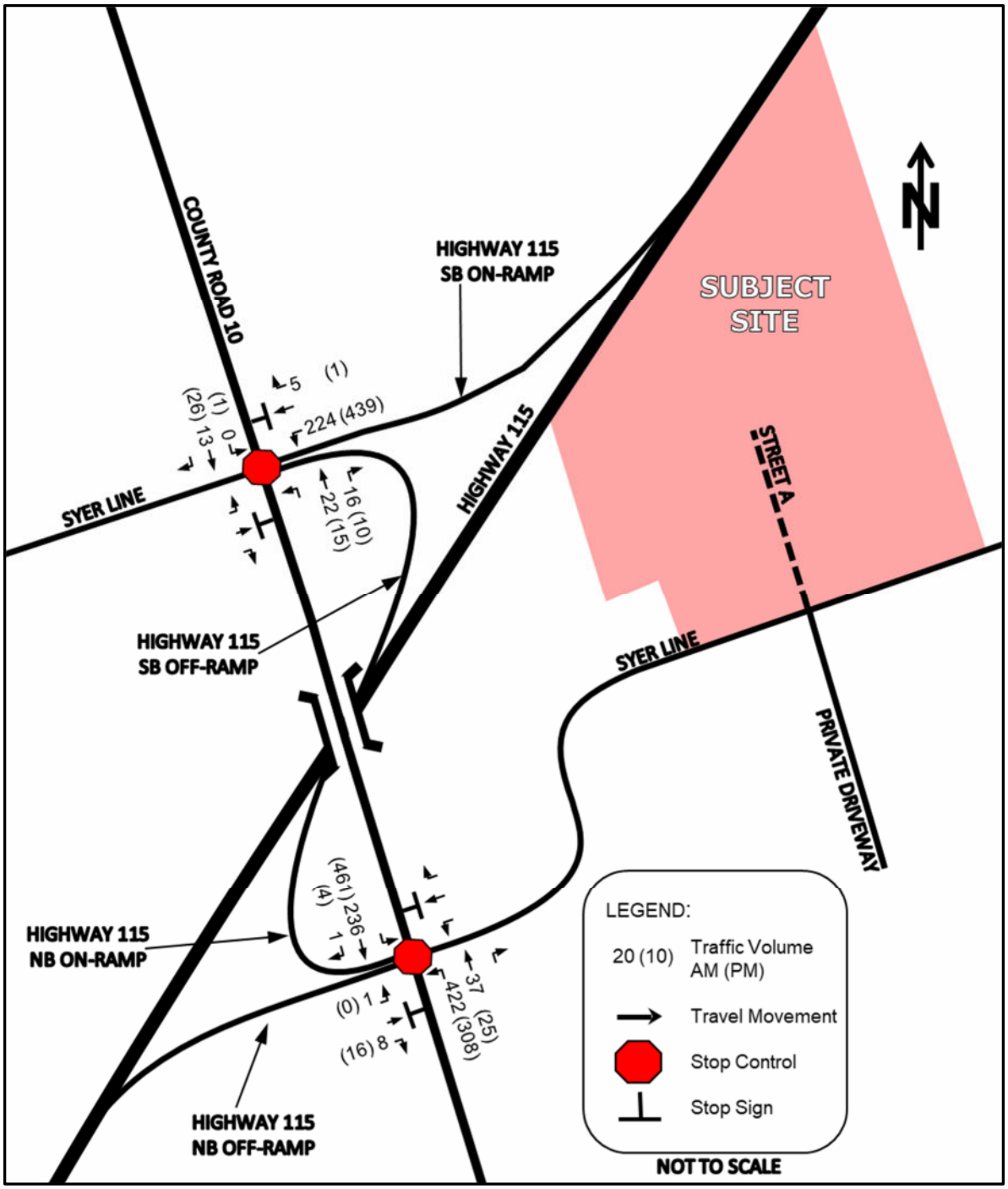
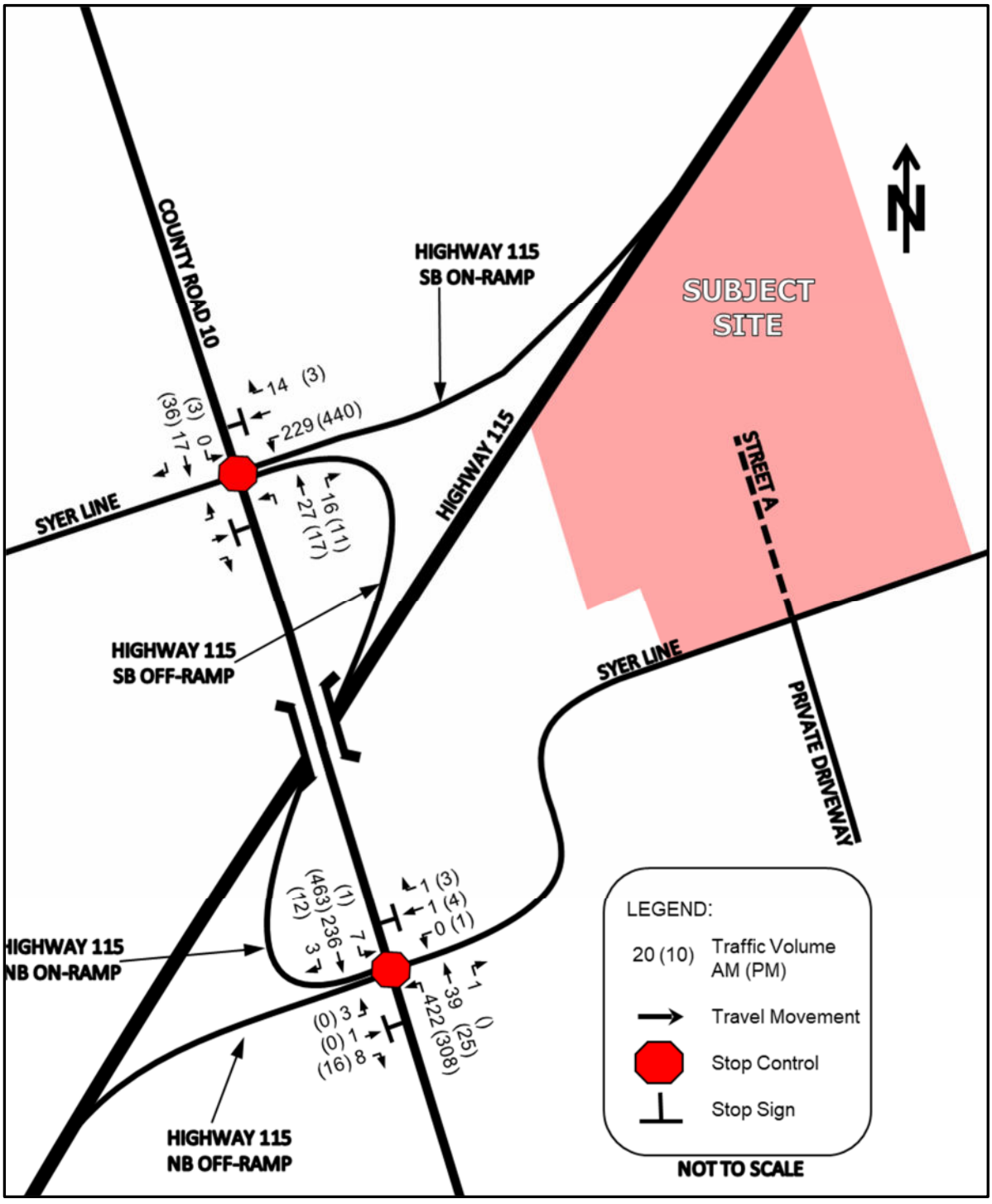


**Figure 14 – Total Net Adjacent Development Traffic Volumes (2038)**



## 2.5 Background Traffic Growth

The 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 completed at the study area intersections.

**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 | Wednesday, March 1st, 2023 | 07:30 – 08:30 | 16:30 – 17:30 | JD Eng.** |
| Highway 115 NB Ramp* & Syer Line / County Road 10 | Wednesday, March 1st, 2023 | 07:45 – 08:45 | 16:30 – 17:30 | JD Eng.** |

* The traffic count data in Appendix C incorrectly labels the Highway 115 SB / NB Ramp in the diagrams; where the Highway 115 Ramp on the east leg is the Highway 115 SB Ramp and the Highway 115 Ramp on the west leg is the Highway 115 NB Ramp
** The traffic counts were completed by Accu Traffic Inc. on behalf of JD Engineering.

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 south leg traffic at the Highway 115 SB Ramp & Syer Line / County Road 10 intersection has been adjusted to match the north leg traffic at the Highway 115 NB Ramp & Syer Line / County Road 10 intersection as there are slight discrepancies due to the peak hours not exactly aligning in the traffic count data.

**Figure 15** illustrates the existing (2023) AM and PM peak hour traffic volumes within the study area.

## 2.7 Horizon Year Traffic Volumes

The background (2028, 2033 and 2038) traffic volumes were estimated using the existing (2023) 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 (2028, 2033 and 2038) respectively, in the AM and PM peak hour traffic volumes for the study area (excluding the proposed development traffic volumes).

**Figure 15 – Existing (2023) Traffic Volumes**

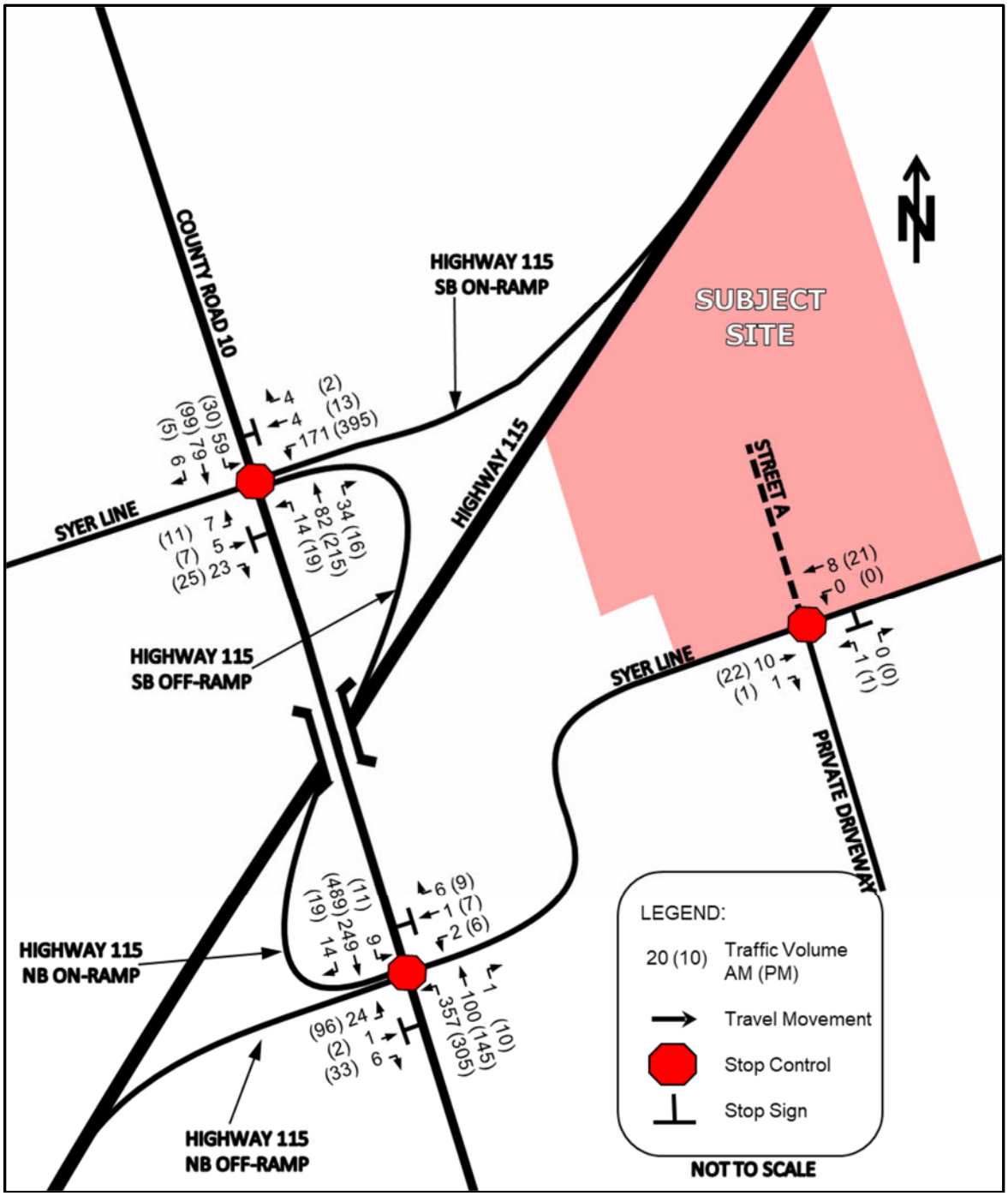


**Figure 16 – Background (2028) Traffic Volumes**

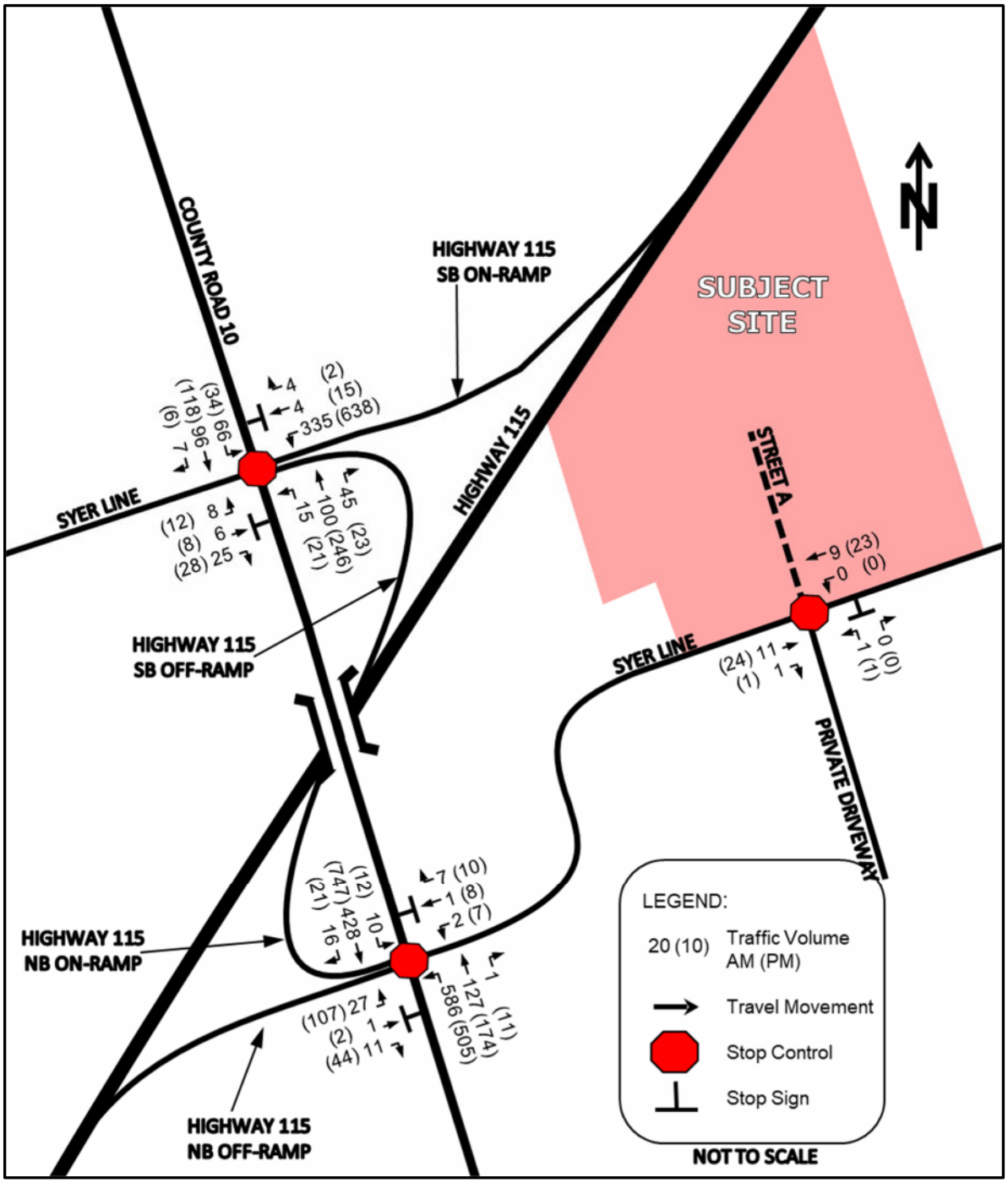


**Figure 17 – Background (2033) Traffic Volumes**

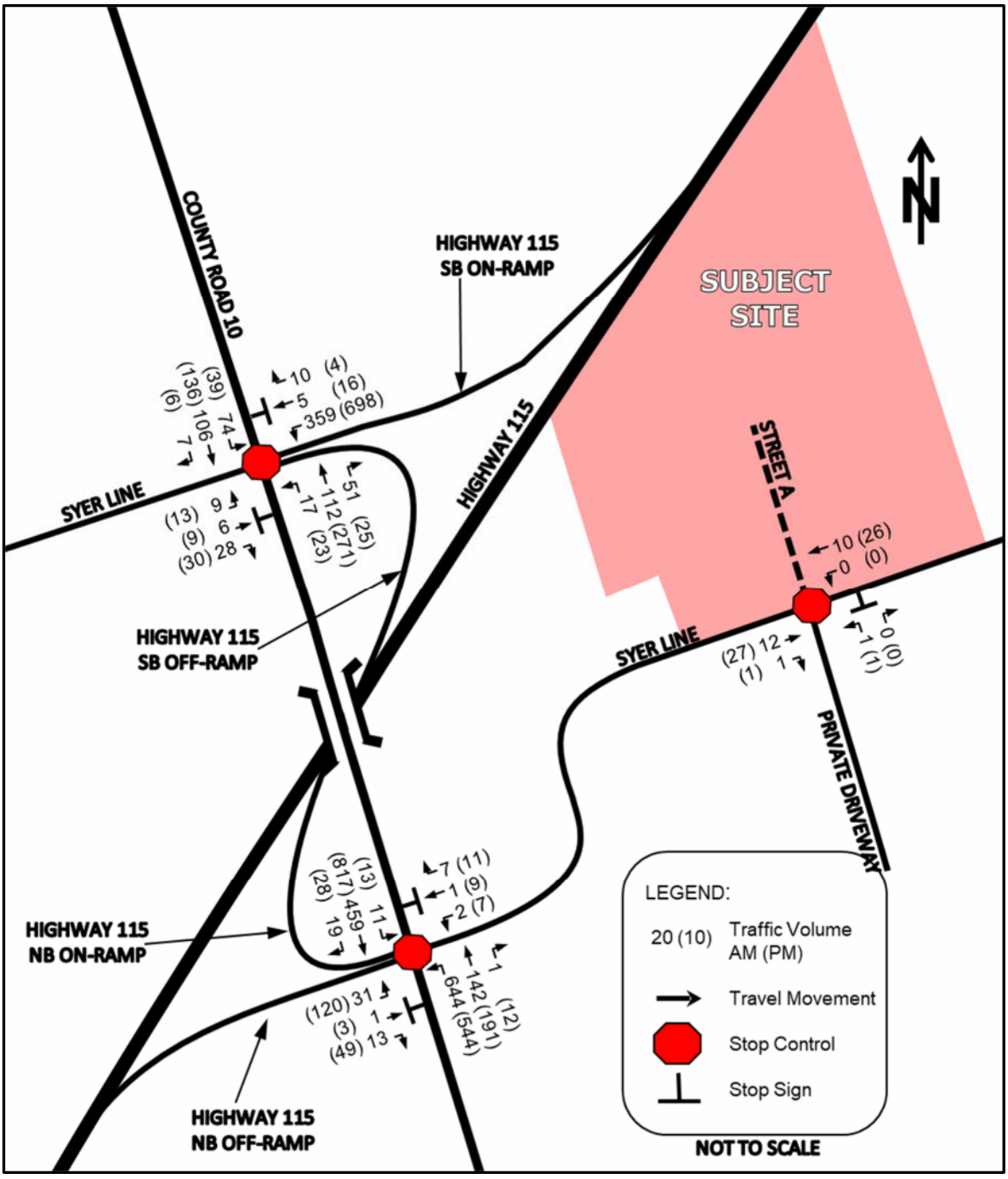
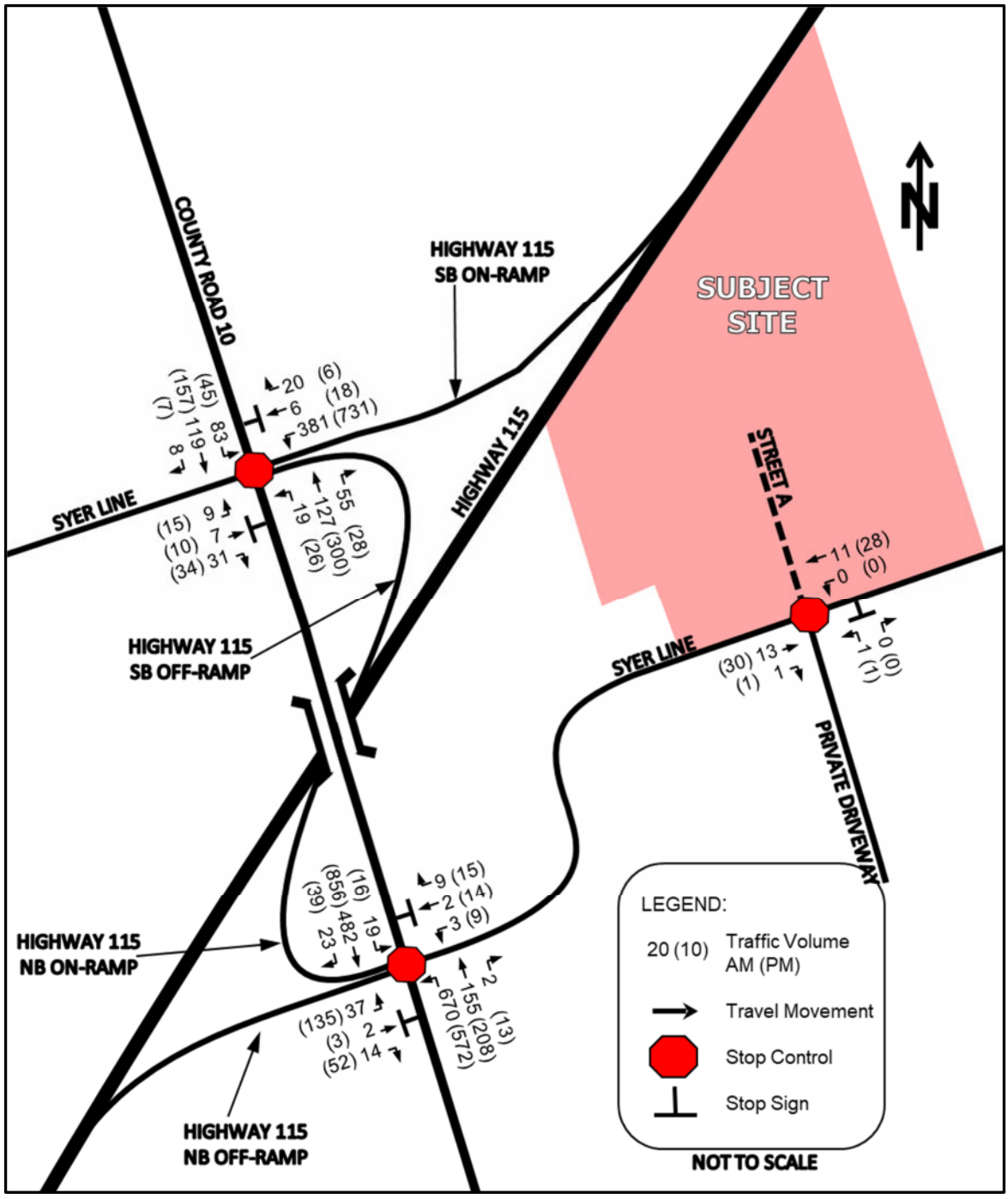


**Figure 18 – Background (2038) Traffic Volumes**



# 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 (2023) Intersection Operation

The results of the LOS analysis under existing (2023) 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 (2023) 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) | - | 6.0 | A | - | - | - | 7.8 | A | - | - |
| EB | 0.05 | 9.9 | A | 2 | - | 0.06 | 10.5 | B | 2 | - |
| WB | 0.22 | 13.3 | B | 7 | - | 0.46 | 18.4 | C | 20 | - |
| NB | 0.01 | 1.0 | A | 1 | - | 0.01 | 0.7 | A | 1 | - |
| SBL | 0.04 | 7.5 | A | 2 | 82 | 0.02 | 7.7 | A | 1 | 82 |
| SBTR | 0.05 | 0.0 | A | 0 | - | 0.06 | 0.0 | A | 0 | - |
| Highway 115 NB Ramp & Syer Line / County Road 10 (unsignalized) | - | 4.2 | A | - | - | - | 9.3 | A | - | - |
| EB | 0.10 | 17.8 | C | 3 | - | 0.62 | 43.2 | E | 29 | - |
| WB | 0.02 | 11.7 | B | 1 | - | 0.09 | 18.7 | C | 3 | - |
| NBL | 0.14 | 8.1 | A | 4 | 85 | 0.18 | 8.6 | A | 6 | 85 |
| NBTR | 0.06 | 0.0 | A | 0 | - | 0.10 | 0.0 | A | 0 | - |
| SB | 0.01 | 0.4 | A | 1 | - | 0.01 | 0.3 | A | 1 | - |

The results of the LOS analysis indicate that all study area 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] (results are provided in **Appendix G**). Based on the above noted criteria additional auxiliary left-turn lanes are not warranted in the study area.

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 (2028) Intersection Operation

The results of the LOS analysis under background (2028) 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 (2028) 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) | - | 16.6 | B | - | - | - | 170.9 | F | - | - |
| EB | 0.06 | 10.4 | B | 2 | - | 0.08 | 11.1 | B | 2 | - |
| WB | 0.75 | 31.3 | D | 51 | - | 1.59 | 299.1 | F | 304 | - |
| NB | 0.01 | 0.8 | A | 1 | - | 0.02 | 0.7 | A | 1 | - |
| SBL | 0.05 | 7.6 | A | 2 | 82 | 0.03 | 7.9 | A | 1 | 82 |
| SBTR | 0.06 | 0.0 | A | 0 | - | 0.08 | 0.0 | A | 0 | - |
| Highway 115 NB Ramp & Syer Line / County Road 10 (unsignalized) | - | 21.2 | D | - | - | - | 948.9 | F | - | - |
| EB | 1.30 | 449.9 | F | 37 | - | 30.34 | Error | F | Error | - |
| WB | 0.15 | 62.2 | F | 4 | - | 1.80 | 884.8 | F | 33 | - |
| NBL | 0.59 | 13.0 | B | 33 | 85 | 0.74 | 21.4 | C | 54 | 85 |
| NBTR | 0.08 | 0.0 | A | 0 | - | 0.12 | 0.0 | A | 0 | - |
| SB | 0.01 | 0.2 | A | 1 | - | 0.01 | 0.3 | A | 0 | - |

The LOS analysis indicates that the Highway 115 SB Ramp & Syer Line / County Road 10 is operating outside the typical design limits as noted in Section 3.1. Based on the Ontario Traffic Manual Book 12 *Signal Justification*, signals are not warranted at the Highway 115 SB Ramp & Syer Line / County Road 10 intersection (results are provided in **Appendix H**). However, based on the anticipated control delay for the Syer Line / Highway 115 SB Ramp approaches, it is anticipated that this intersection will need to be signalized. As previously noted in Section 3.2, the warrant for signalization is the result of the future developments in the Millbrook community. It is recommended the MTO continue to monitor the traffic at the Highway 115 SB Ramp & Syer Line / County Road 10 intersection closer to the 2028 horizon year as the development in the Millbrook community progresses, to determine the exact timing of the signalization.

The results of the LOS analysis indicates that the eastbound movement at the Highway 115 NB Ramp & Syer Line / County Road 10 intersection is operating outside the typical design limits noted in Section 3.1. Based on the Ontario Traffic Manual Book 12 *Signal Justification*, traffic signals are 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 / Highway 115 NB Ramp approaches, it is recommended the intersection is signalized. It is noted that signalization will be warranted based on the future developments in the Millbrook community[3]; it is recommended the MTO review the traffic at the intersection closer as the build-out of the Millbrook community progresses, to determine the exact timing of the signalization.

[3] The full build-out of the Towerhill Developments Phase 2 is the only adjacent development assumed in the existing (2023) scenario.

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 (2028) 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 (2028) 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) | 0.47 | 22.8 | C | - | - | 0.80 | 36.7 | D | - | - |
| EB | 0.04 | 12.1 | B | 7 | - | 0.04 | 7.2 | A | 6 | - |
| WB | 0.59 | 22.0 | C | 87 | - | 0.82 | 25.1 | C | 206 | - |
| NB | 0.28 | 25.8 | C | 42 | - | 0.76 | 62.5 | E | 120 | - |
| SBL | 0.18 | 24.5 | C | 22 | 82 | 0.25 | 47.3 | D | 20 | 82 |
| SBTR | 0.17 | 24.1 | C | 29 | - | 0.31 | 45.9 | D | 51 | - |
| Highway 115 NB Ramp & Syer Line / County Road 10 (signalized) | 0.77 | 14.1 | B | - | - | 1.01 | 57.6 | E | - | - |
| EB | 0.47 | 50.0 | D | 18 | - | 0.80 | 74.3 | E | 70 | - |
| WB | 0.04 | 43.9 | D | 7 | - | 0.08 | 48.0 | D | 13 | - |
| NBL | 0.77 | 10.3 | B | 74 | 85 | 1.02 | 70.4 | E | 183 | 85 |
| NBTR | 0.10 | 1.8 | A | 11 | - | 0.16 | 4.8 | A | 26 | - |
| SB | 0.56 | 18.9 | B | 134 | - | 0.99 | 58.8 | E | 347 | - |

The results of the LOS analysis indicate that the Highway 115 NB Ramp & Syer Line / County Road 10 intersection is operating marginally outside the typical design limits as noted in Section 3.1 Since the delay is under LOS F and the V/C ratio marginally exceeds the theoretical capacity of 1.0, no further improvements are recommended. As noted above, it is recommended the MTO monitor the queuing at the intersection closer to the 2028 horizon year as the development in the Millbrook community progresses, to determine if further improvements are recommended.

The anticipated queuing for northbound left turn movements at the Highway 115 NB Ramp & Syer Line / County Road 10 intersection is anticipated to extend past the existing storage length; however, the excess queue will not block any adjacent intersection. As noted above, it is recommended this queuing is monitored as the development in the Millbrook community progresses.

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 (2028) scenario within the study area.

## 3.4 Background (2033) Intersection Operation

The results of the LOS analysis under background (2033) traffic volumes during the AM and PM peak hour can be found below in **Table 9**. The recommended improvements identified in Section 3.3 has been utilized in this scenario. Detailed output of the Synchro analysis can be found in **Appendix E**.

**Table 9 – Background (2033) 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) | 0.51 | 24.0 | C | - | - | 0.88 | 43.4 | D | - | - |
| EB | 0.04 | 12.2 | B | 8 | - | 0.05 | 7.2 | A | 7 | - |
| WB | 0.65 | 23.9 | C | 99 | - | 0.90 | 33.5 | C | 278 | - |
| NB | 0.32 | 26.5 | C | 47 | - | 0.83 | 69.1 | E | 142 | - |
| SBL | 0.21 | 25.0 | C | 25 | 82 | 0.31 | 50.3 | D | 23 | 82 |
| SBTR | 0.19 | 24.3 | C | 32 | - | 0.36 | 46.9 | D | 57 | - |
| Highway 115 NB Ramp & Syer Line / County Road 10 (signalized) | 0.82 | 26.1 | C | - | - | 1.14 | 92.7 | F | - | - |
| EB | 0.40 | 46.8 | D | 19 | - | 0.85 | 79.1 | E | 83 | - |
| WB | 0.03 | 42.7 | D | 7 | - | 0.08 | 47.3 | D | 14 | - |
| NBL | 0.83 | 20.7 | C | 155 | 85 | 1.18 | 127.7 | F | 228 | 85 |
| NBTR | 0.12 | 2.3 | A | 12 | - | 0.18 | 5.4 | A | 28 | - |
| SB | 0.81 | 37.8 | D | 165 | - | 1.10 | 95.4 | F | 401 | - |

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. Based on the traffic projections identified in 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.
  - Widen SB Off-Ramp for the construction of an eastbound left turn lane with a 60 metre storage length, 40 parallel length and 100 metre taper length
  - Extend the northbound left turn lane to provide a 230 metre storage length.

The results of the LOS analysis under background (2033) 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 (2033) 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) | 0.48 | 25.0 | C | - | - | 0.78 | 29.4 | C | - | - |
| EB | 0.04 | 15.4 | B | 9 | - | 0.07 | 29.1 | C | 15 | - |
| WBL | 0.64 | 27.7 | C | 105 | 190 | 0.81 | 20.9 | C | 149 | 190 |
| WBTR | 0.02 | 15.6 | B | 5 | - | 0.02 | 8.9 | A | 5 | - |
| NB | 0.29 | 24.7 | C | 47 | - | 0.69 | 46.1 | D | 107 | - |
| SBL | 0.18 | 23.4 | C | 24 | 82 | 0.21 | 35.0 | D | 18 | 82 |
| SBTR | 0.17 | 22.8 | C | 32 | - | 0.30 | 35.0 | C | 47 | - |
| Highway 115 NB Ramp & Syer Line / County Road 10 (signalized) | 0.83 | 14.0 | B | - | - | 0.91 | 41.0 | D | - | - |
| EBL | 0.52 | 51.6 | D | 17 | 100 | 0.70 | 54.1 | D | 50 | 100 |
| EBTR | 0.02 | 43.7 | D | 7 | - | 0.05 | 39.4 | D | 12 | - |
| WB | 0.04 | 43.9 | D | 7 | - | 0.08 | 39.7 | D | 12 | - |
| NBL | 0.83 | 12.1 | B | 93 | 230 | 0.93 | 45.8 | D | 200 | 230 |
| NBTR | 0.11 | 1.9 | A | 12 | - | 0.18 | 4.6 | A | 27 | - |
| SB | 0.35 | 16.1 | B | 70 | - | 0.89 | 44.9 | D | 161 | - |

The results of the LOS analysis indicate that the Highway 115 SB Ramp & Syer Line / County Road 10 intersection is 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.

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 (2033) scenario within the study area.

## 3.5 Background (2038) Intersection Operation

The results of the LOS analysis under background (2038) traffic volumes during the AM and PM peak hour can be found below in **Table 11**. The recommended improvements identified in Section 3.2, 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 (2038) 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) | 0.52 | 25.8 | C | - | - | 0.84 | 32.7 | C | - | - |
| EB | 0.05 | 15.4 | B | 9 | - | 0.08 | 30.0 | C | 16 | - |
| WBL | 0.68 | 29.4 | C | 114 | 190 | 0.85 | 23.9 | C | 163 | 190 |
| WBTR | 0.03 | 15.7 | B | 6 | - | 0.02 | 8.9 | A | 6 | - |
| NB | 0.33 | 25.4 | C | 53 | - | 0.77 | 50.8 | D | 127 | - |
| SBL | 0.21 | 23.9 | C | 27 | 82 | 0.27 | 36.8 | D | 21 | 82 |
| SBTR | 0.19 | 23.1 | C | 35 | - | 0.35 | 35.9 | D | 54 | - |
| Highway 115 NB Ramp & Syer Line / County Road 10 (signalized) | 0.83 | 19.8 | B | - | - | 0.98 | 52.8 | D | - | - |
| EBL | 0.44 | 47.5 | D | 20 | 100 | 0.73 | 56.2 | E | 55 | 100 |
| EBTR | 0.03 | 42.6 | D | 8 | - | 0.05 | 38.8 | D | 12 | - |
| WB | 0.05 | 42.8 | D | 8 | - | 0.11 | 39.3 | D | 15 | - |
| NBL | 0.84 | 17.8 | B | 124 | 230 | 1.00 | 66.5 | E | 229 | 230 |
| NBTR | 0.13 | 2.4 | A | 14 | - | 0.20 | 5.2 | A | 32 | - |
| SB | 0.47 | 24.3 | C | 77 | - | 0.97 | 56.6 | E | 183 | - |

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.

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 (2038) scenario within the study area.

Notwithstanding, based on the traffic operations at the Highway 115 NB Ramp & Syer Line / County Road 10 intersection the following additional long-term interchange improvements should also be considered for planning purposes:

- Highway 115 NB Ramp & Syer Line / County Road 10
  - Twin the northbound left turn lane on County Road 10
  - Construct a second northbound on-ramp lane.

# 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 | 225 employees | 102 | 21 | 123 | 25 | 87 | 112 |

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 within the study area 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 **Figure 19**.

## 4.3 Total Horizon Year Traffic Volumes with the Proposed Development

For the total (2028, 2033 and 2038) horizon year traffic volumes, the proposed development traffic was added to the background (2028, 2033 and 2038) traffic volumes. The resulting total (2028, 2033 and 2038) 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**

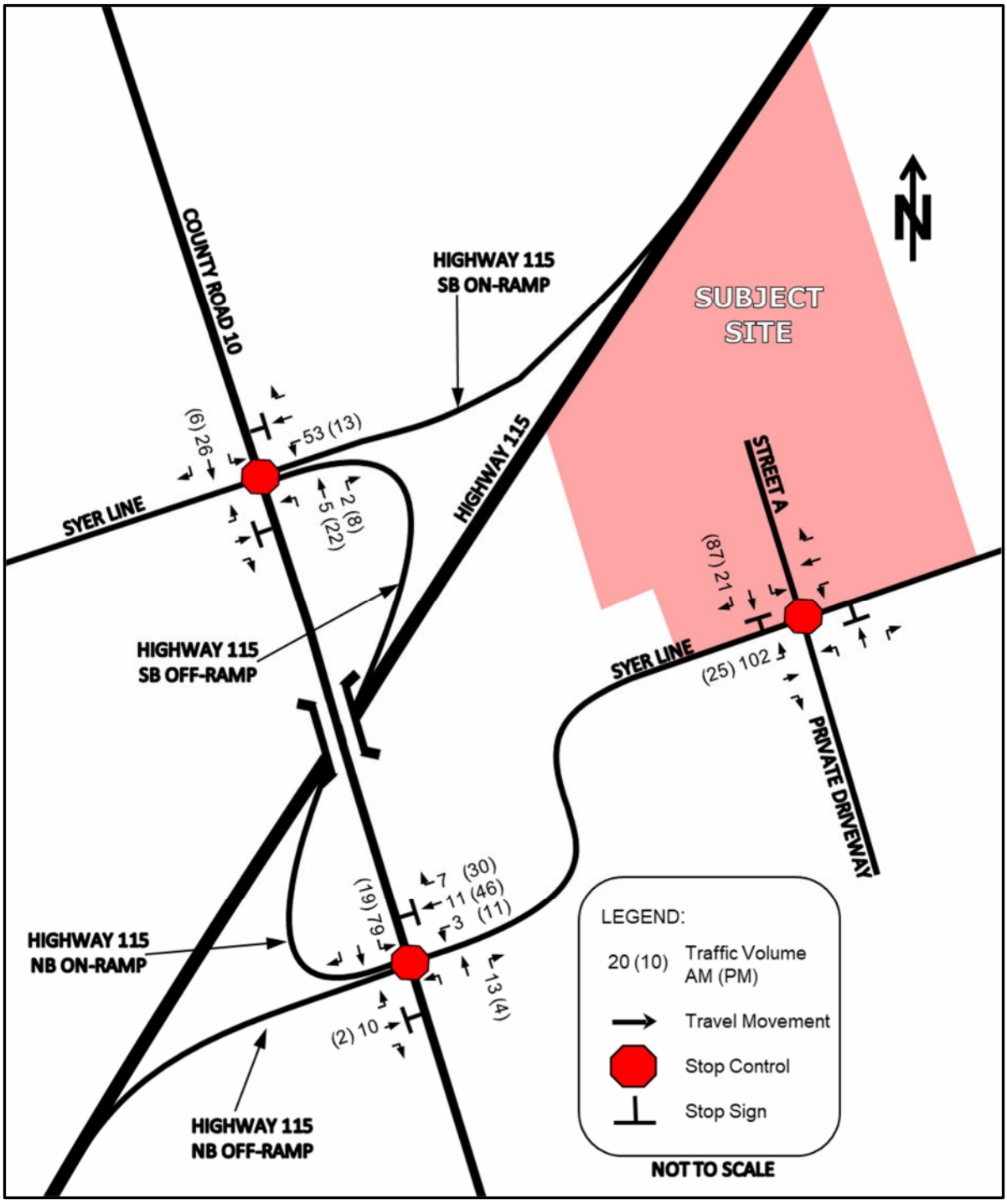


**Figure 20 – Total (2028) Traffic Volumes**

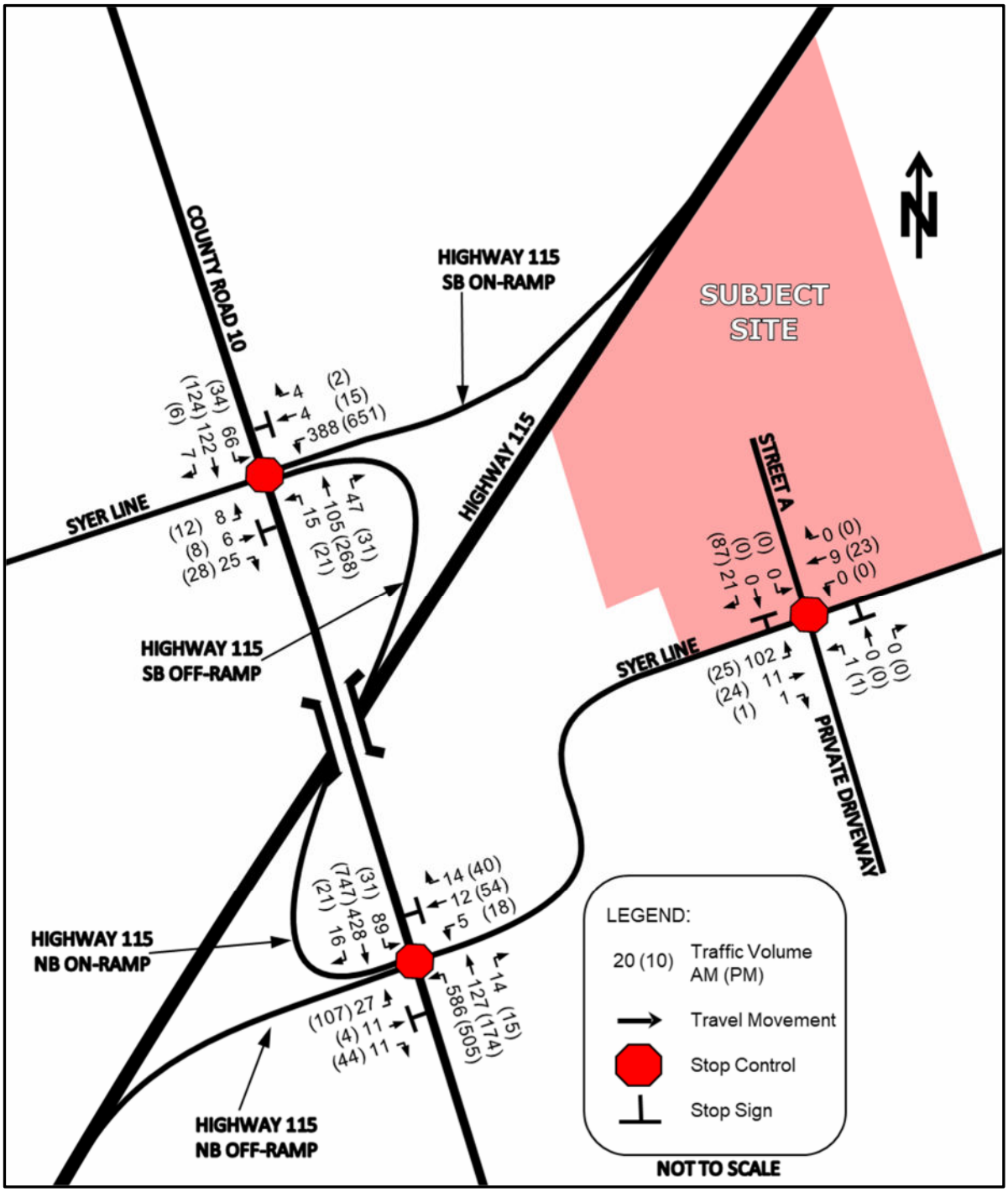


**Figure 21 – Total (2033) Traffic Volumes**

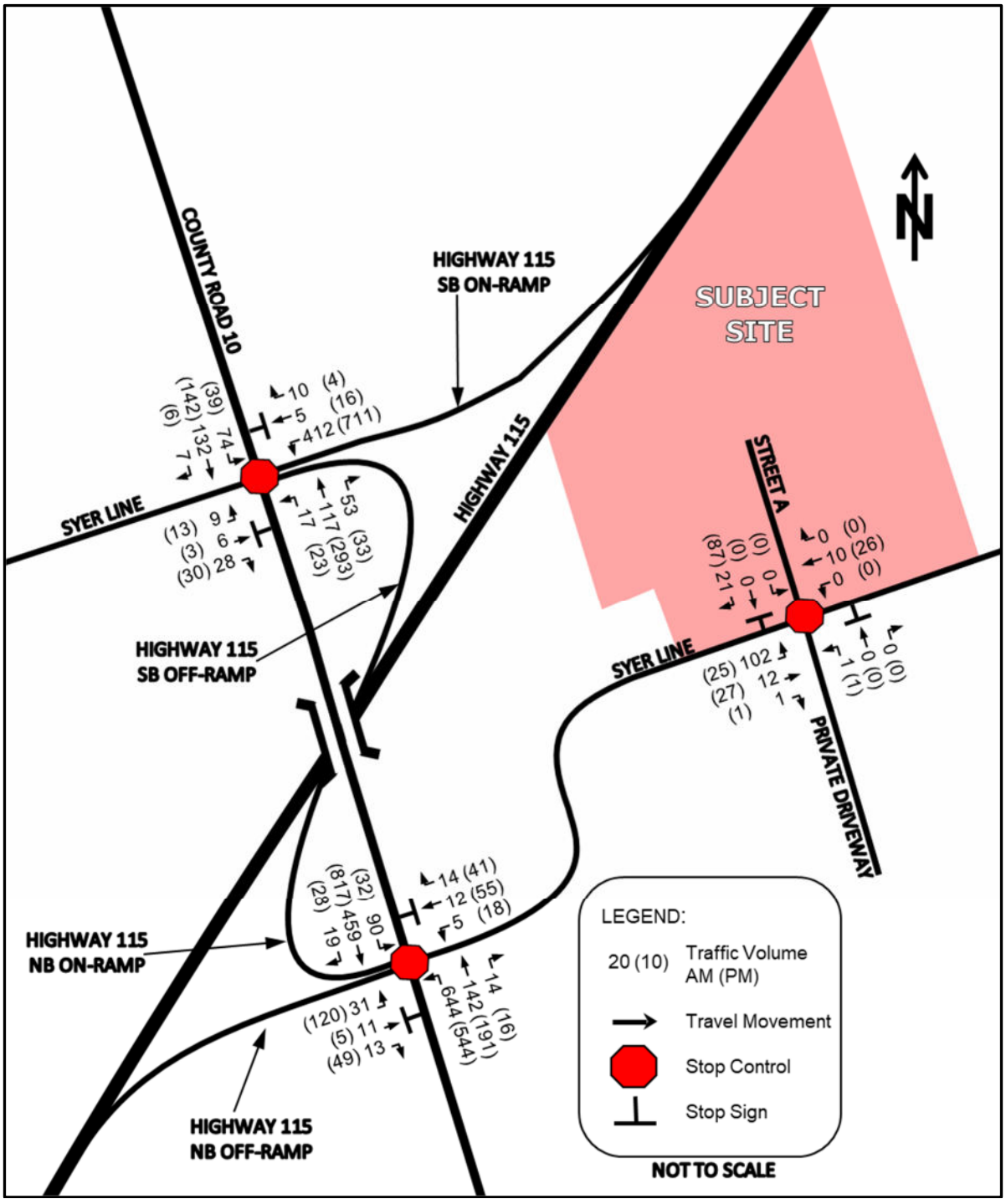
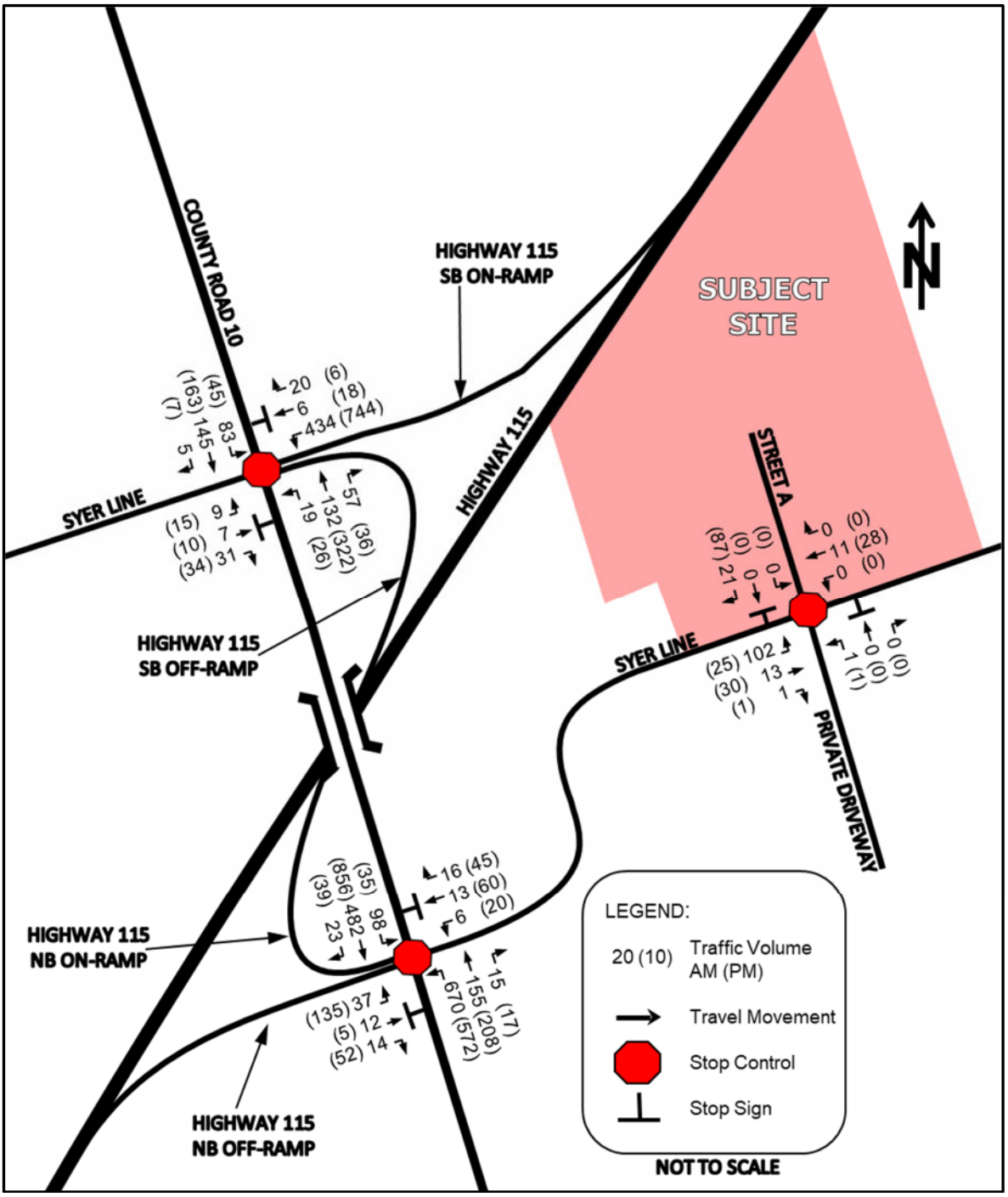


**Figure 22 – Total (2038) Traffic Volumes**



# 5 Intersection Operation with Proposed Development

## 5.1 Total (2028) Intersection Operation

The results of the LOS analysis under total (2028) traffic volumes during the AM and PM peak hour can be found below in **Table 14**. The recommended improvements identified in Section 3.3 has been utilized in this scenario. Detailed output of the Synchro analysis can be found in **Appendix F**.

**Table 14 – Total (2028) 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) | 0.53 | 24.6 | C | - | - | 0.83 | 39.7 | D | - | - |
| EB | 0.04 | 12.1 | B | 7 | - | 0.04 | 7.2 | A | 6 | - |
| WB | 0.69 | 25.3 | C | 108 | - | 0.83 | 26.4 | C | 216 | - |
| NB | 0.30 | 26.1 | C | 44 | - | 0.83 | 68.9 | E | 142 | - |
| SBL | 0.18 | 24.6 | C | 22 | 82 | 0.28 | 49.0 | D | 20 | 82 |
| SBTR | 0.21 | 24.7 | C | 36 | - | 0.33 | 46.2 | D | 53 | - |
| Highway 115 NB Ramp & Syer Line / County Road 10 (signalized) | 0.80 | 19.8 | B | - | - | 1.05 | 71.6 | E | - | - |
| EB | 0.44 | 47.1 | D | 21 | - | 0.90 | 93.5 | F | 85 | - |
| WB | 0.16 | 43.6 | D | 13 | - | 0.40 | 50.6 | D | 48 | - |
| NBL | 0.81 | 14.4 | B | 86 | 85 | 1.06 | 83.6 | F | 188 | 85 |
| NBTR | 0.12 | 2.3 | A | 12 | - | 0.17 | 5.7 | A | 26 | - |
| SB | 0.74 | 26.4 | C | 199 | - | 1.05 | 78.1 | E | 364 | - |
| Syer Line / Street A (unsignalized) | - | 6.5 | A | - | - | - | 6.0 | A | - | - |
| NB | 0.00 | 10.6 | B | 0 | - | 0.00 | 10.3 | B | 0 | - |
| SB | 0.02 | 8.4 | A | 1 | - | 0.09 | 8.8 | A | 3 | - |

The results of the LOS analysis indicate that the Highway 115 NB Ramp & Syer Line / County Road 10 intersection is operating marginally outside the typical design limits as noted in Section 3.1 Since the delay is under LOS F and the V/C ratio marginally exceeds the theoretical capacity of 1.0, no further improvements are recommended. As noted above, it is recommended the MTO monitor the queuing at the intersection closer to the 2028 horizon year as the development in the Millbrook community progresses, to determine if further improvements are recommended.

The anticipated queuing for northbound left turn movements at the Highway 115 NB Ramp & Syer Line / County Road 10 intersection is anticipated to extend past the existing storage length; however, the excess queue will not block any adjacent intersection. As noted above, it is recommended this queuing is monitored as the development in the Millbrook community progresses.

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 (2028) scenario within the study area.

## 5.2 Total (2033) Intersection Operation

The results of the LOS analysis under total (2033) traffic volumes during the AM and PM peak hour can be found below in **Table 15**. The recommended improvements identified in Sections 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 (2033) 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) | 0.53 | 27.2 | C | - | - | 0.82 | 31.5 | C | - | - |
| EB | 0.04 | 15.4 | B | 9 | - | 0.07 | 27.4 | C | 14 | - |
| WBL | 0.73 | 31.9 | C | 129 | 190 | 0.83 | 22.5 | C | 154 | 190 |
| WBTR | 0.02 | 15.6 | B | 5 | - | 0.02 | 8.9 | A | 5 | - |
| NB | 0.30 | 24.9 | C | 49 | - | 0.76 | 49.8 | D | 120 | - |
| SBL | 0.18 | 23.4 | C | 24 | 82 | 0.23 | 35.8 | D | 18 | 82 |
| SBTR | 0.21 | 23.3 | C | 38 | - | 0.31 | 35.2 | D | 49 | - |
| Highway 115 NB Ramp & Syer Line / County Road 10 (signalized) | 0.81 | 20.7 | C | - | - | 0.95 | 48.1 | D | - | - |
| EBL | 0.39 | 46.8 | D | 17 | 100 | 0.80 | 66.3 | E | 52 | 100 |
| EBTR | 0.11 | 43.3 | D | 11 | - | 0.06 | 38.7 | D | 13 | - |
| WB | 0.16 | 43.7 | D | 13 | - | 0.41 | 42.2 | D | 40 | - |
| NBL | 0.83 | 18.1 | B | 116 | 230 | 0.96 | 54.3 | D | 212 | 230 |
| NBTR | 0.13 | 2.3 | A | 13 | - | 0.19 | 5.2 | A | 30 | - |
| SB | 0.55 | 25.0 | C | 86 | - | 0.95 | 53.2 | D | 174 | - |
| Syer Line / Street A (unsignalized) | - | 6.5 | A | - | - | - | 5.8 | A | - | - |
| NB | 0.00 | 10.7 | B | 0 | - | 0.00 | 10.3 | B | 0 | - |
| SB | 0.02 | 8.4 | A | 1 | - | 0.09 | 8.8 | A | 3 | - |

The results of the LOS analysis indicate that the Highway 115 SB Ramp & Syer Line / County Road 10 intersection is 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.

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 (2033) scenario within the study area.

## 5.3 Total (2038) Intersection Operation

The results of the LOS analysis under total (2038) traffic volumes during the AM and PM peak hour can be found below in **Table 16**. The recommended improvements identified in Sections 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 (2038) 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) | 0.58 | 28.5 | C | - | - | 0.87 | 35.2 | D | - | - |
| EB | 0.05 | 15.4 | B | 9 | - | 0.08 | 30.4 | C | 16 | - |
| WBL | 0.78 | 34.6 | C | 141 | 190 | 0.86 | 25.2 | C | 168 | 190 |
| WBTR | 0.03 | 15.7 | B | 6 | - | 0.02 | 8.9 | A | 6 | - |
| NB | 0.34 | 25.6 | C | 55 | - | 0.84 | 56.2 | E | 145 | - |
| SBL | 0.21 | 23.9 | C | 27 | 82 | 0.29 | 38.1 | D | 21 | 82 |
| SBTR | 0.23 | 23.7 | C | 42 | - | 0.36 | 36.1 | D | 56 | - |
| Highway 115 NB Ramp & Syer Line / County Road 10 (unsignalized) | 0.82 | 25.1 | C | - | - | 1.01 | 63.0 | E | - | - |
| EBL | 0.45 | 47.6 | D | 20 | 100 | 0.85 | 73.3 | E | 62 | 100 |
| EBTR | 0.12 | 43.2 | D | 12 | - | 0.06 | 38.1 | D | 13 | - |
| WB | 0.19 | 43.8 | D | 115 | - | 0.42 | 41.8 | D | 44 | - |
| NBL | 0.84 | 20.8 | C | 148 | 230 | 1.03 | 73.7 | E | 229 | 230 |
| NBTR | 0.14 | 2.4 | A | 14 | - | 0.21 | 5.9 | A | 32 | - |
| SB | 0.69 | 32.9 | C | 101 | - | 1.03 | 73.0 | E | 192 | - |
| Syer Line / Street A (unsignalized) | - | 6.4 | A | - | - | - | 5.6 | A | - | - |
| NB | 0.00 | 10.7 | B | 0 | - | 0.00 | 10.4 | B | 0 | - |
| SB | 0.02 | 8.4 | A | 1 | - | 0.09 | 8.8 | A | 3 | - |

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.

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 (2038) scenario within the study area.

As noted in Section 3.5, based on the traffic operations at the Highway 115 NB Ramp & Syer Line / County Road 10 intersection the following additional long-term interchange improvements should also be considered for planning purposes:

- Highway 115 NB Ramp & Syer Line / County Road 10
  - Twin the northbound left turn lane on County Road 10
  - Construct a second northbound on-ramp lane.

## 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 130 metres respectively).

The sight distance east and west of the potential driveway for Block 5 in the proposed development onto Syer Line (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 130 metres respectively).

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

# 6 Summary

The **SLIP DEVCO INC.** 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 123 AM and 112 PM peak hour trips.
2. Detailed turning movement traffic and pedestrian counts were completed at the intersections of Highway 115 SB Ramp & Syer Line / County Road 10 and Highway 115 NB Ramp & Syer Line / County Road 10, completed on Wednesday, March 1st, 2023.
3. An intersection operation analysis was completed at the study area intersections, using the existing (2023) and background (2028, 2033 and 2038) 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 (2028) 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 (2033) Traffic Volumes**

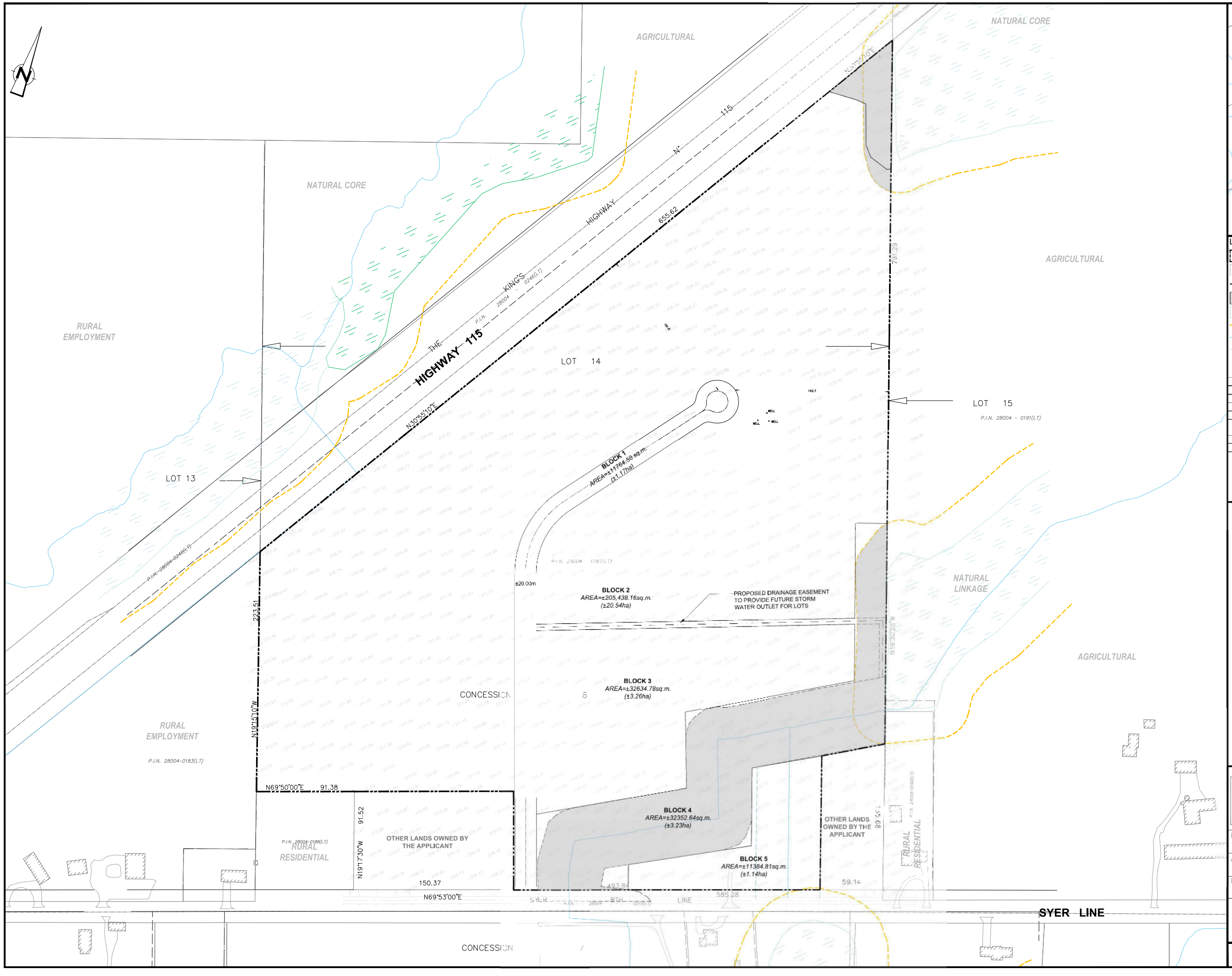
- Highway 115 SB Ramp & Syer Line / County Road 10
  - Widen the SB Off-Ramp for the construction of a westbound left turn lane with 150 metre storage length, 40 parallel length and 100 metre taper length and
  - Adjust signal to accommodate a protected + permissive westbound left turn phase.
- Highway 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.
  - Widen SB Off-Ramp for the construction of an eastbound left turn lane with a 60 metre storage length, 40 parallel length and 100 metre taper length.
  - Extend the northbound left turn lane to provide a 230 metre storage length.

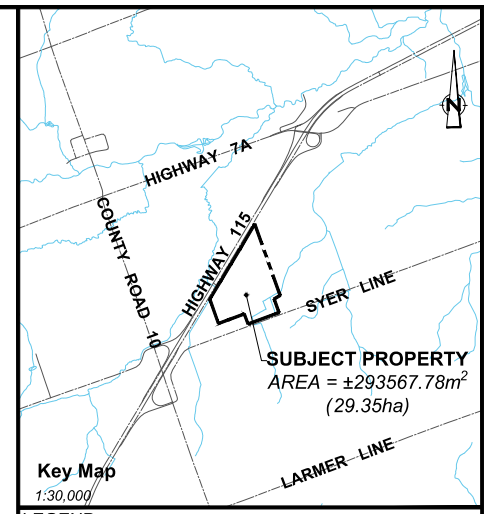
**Long-Range Planning (Post 2033)**

- Highway 115 NB Ramp & Syer Line / County Road 10
  - Twin the northbound left turn lane on County Road 10
  - Construct a second northbound on-ramp 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 (2028, 2033 and 2038) 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 (anticipated to start in the existing (2023) year), to determine if infrastructure improvements are warranted noted for the 2028 and 2033 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 – Concept Plan




LEGEND

- SUBJECT BOUNDARY
- EXISTING PARCEL
- EXISTING ROAD
- ENVIRONMENTAL CONSTRAINTS
- EXISTING WETLANDS
- WETLAND BUFFER *(30m)*
- WATERCOURSE
- WATERCOURSE BUFFER *(30m)*

SITE STATISTICS

| BLOCK/LOT # | AREA (ha) | DESCRIPTION |
|---|---|---|
| BLOCK 1 | 1.17 | 20 mt Right of Way |
| BLOCK 2 | 20.54 | Developable Area |
| BLOCK 3 | 3.26 | Developable Area |
| BLOCK 4 | 3.23 | Environmental Constraints and Drainage Easement |
| BLOCK 5 | 1.14 | Developable Area |
| TOTAL | 29.34 | |

**Submission Requirements**

ADDITIONAL INFORMATION REQUIRED UNDER SECTION 51-17 (a-l) THE PLANNING ACT

a) As shown on this Draft Plan
b) As shown on this Draft Plan
c) As shown on this Draft Plan
d) Rural Employment
e) Agricultural
f) As shown on this Draft Plan
f.1) N/A
g) As shown on this Draft Plan
h) -
i) -
j) As shown on this Draft Plan
k) None
l) As shown on this Draft Plan

OWNER'S CERTIFICATE
I hereby authorize EcoVue Consulting Services Inc.
to prepare and submit this plan to the County of Hastings

Slip DevCo Inc. Date

SURVEYOR'S CERTIFICATE
This Draft Plan accurately shows the boundaries of all lands proposed to be subdivided.
Certified by:

Elliott and Parr (Peterborough) LTD. Date


**EcoVue Consulting Services Inc.**
311 George St. N., Suite 200
Peterborough ON K9J 3H3
Tel: 705-876-8340 Fax: 705-742-8343
www.ecovueconsulting.com


| DRAWN BY: | PROJECT No.: |
|---|---|
| PP | 23-2530 |
| APPROVED BY: | HORIZ. SCALE: 1:1,500 |
| REVISION DATE: OCTOBER 16, 2023 | PLOT DATE: OCTOBER 16, 2023 |

**Syer Line Industrial Subdivision**
*Slip DevCo Inc.*
1066 SYER LINE
PART OF LOT 14, CONCESSION 08
GEOG. TWP. OF CAVAN
NOW IN THE TOWNSHIP OF CAVAN - MONAGHAN
COUNTY OF PETERBOROUGH

CONCEPT PLAN **CP1**

# 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

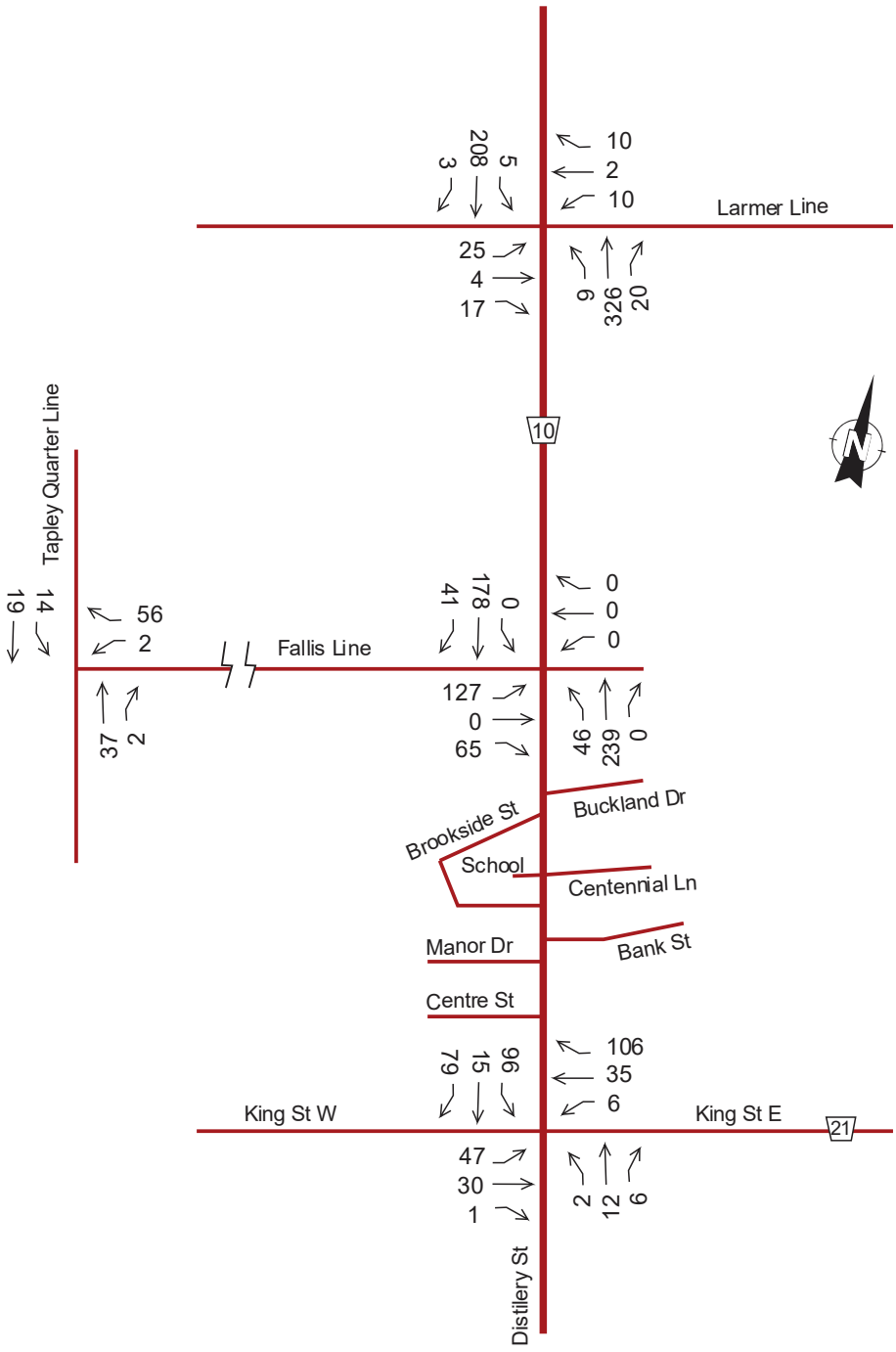



***Exhibit 4:*** *Existing AM Peak Hour Traffic Volumes (2021).*

## PM Peak Hour - Existing Volumes 2021

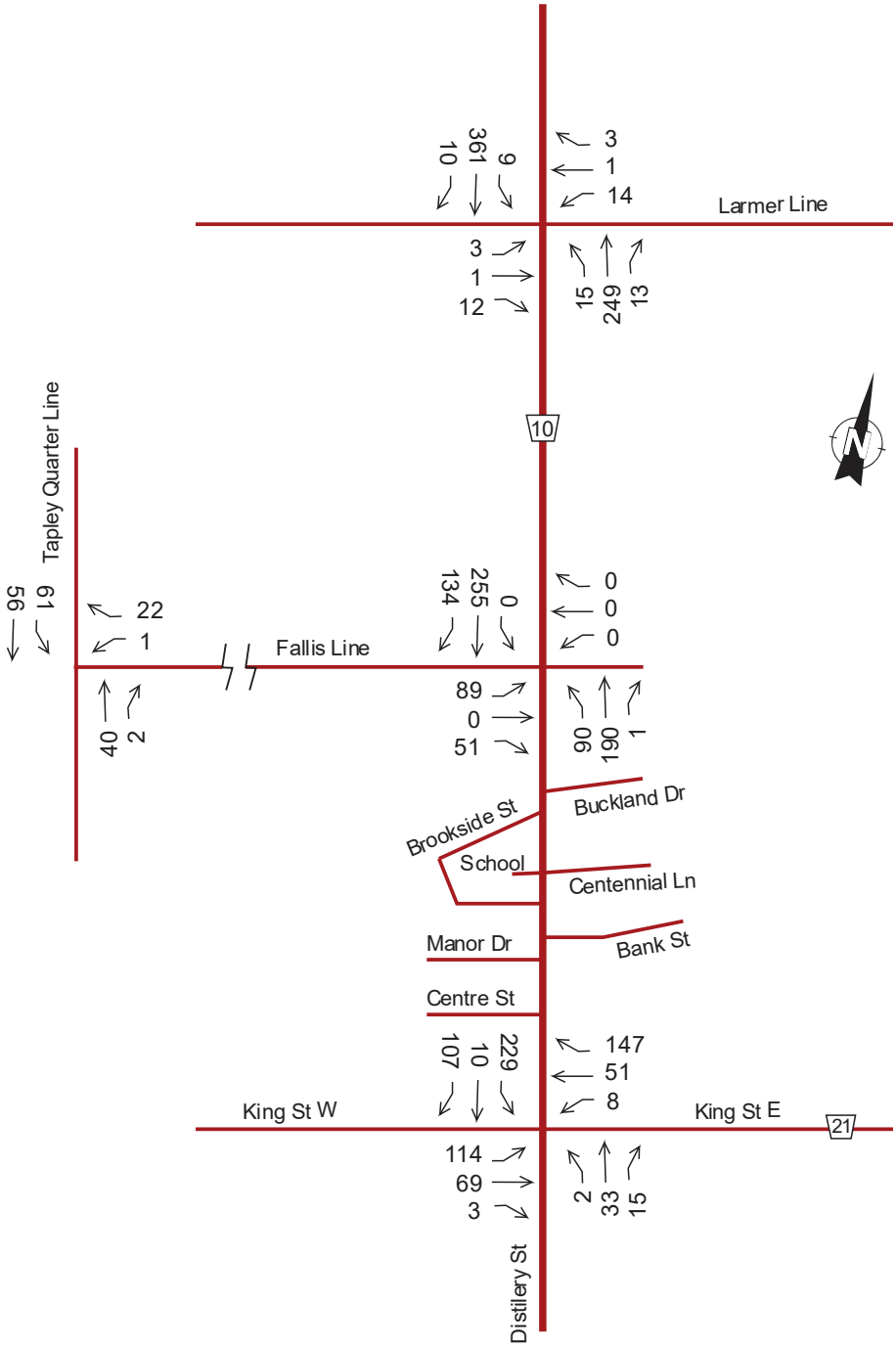



***Exhibit 5:*** *Existing PM Peak Hour Traffic Volumes (2021).*

# 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

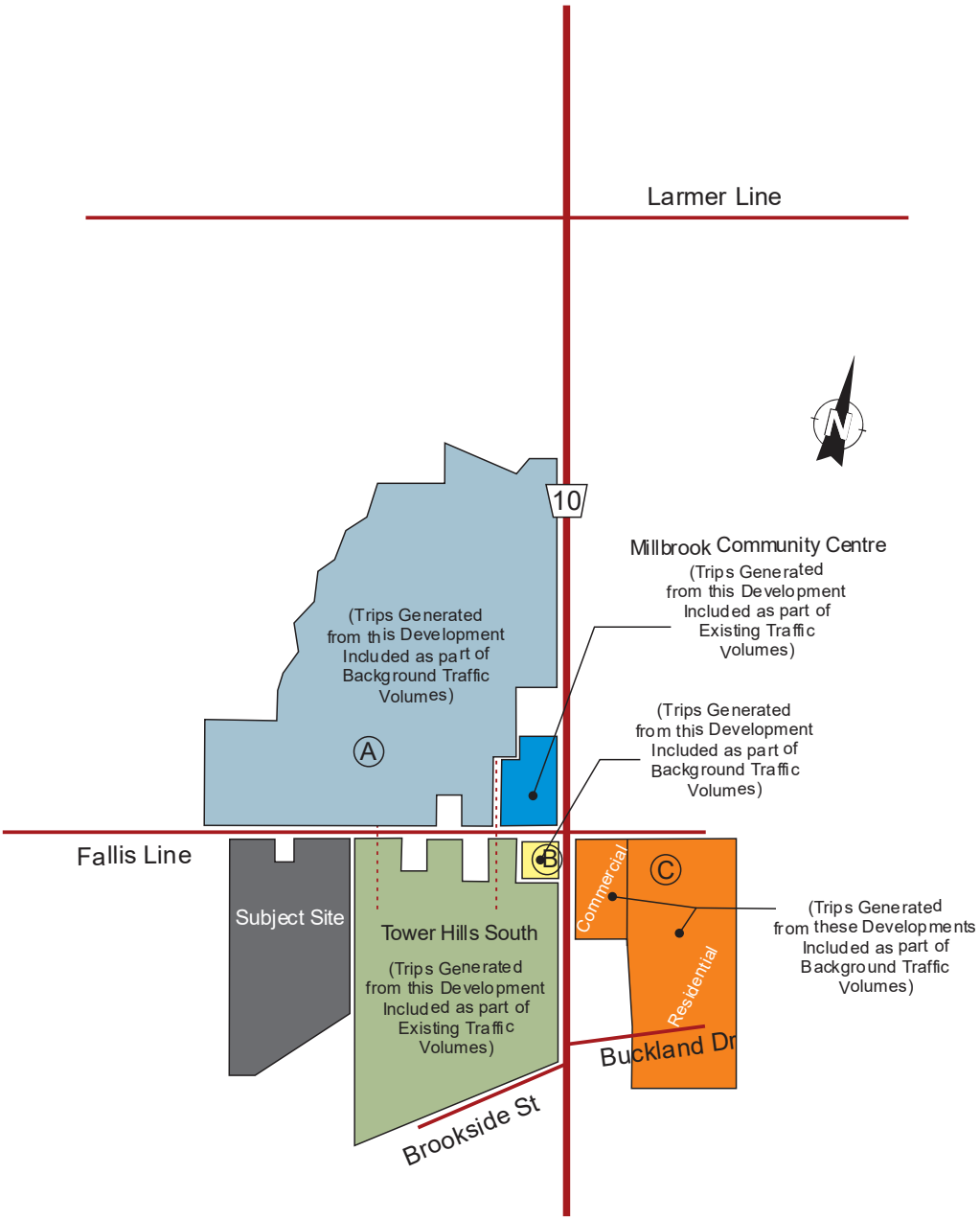



***Exhibit 7:*** *Sketch of Developments Within the Area.*

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

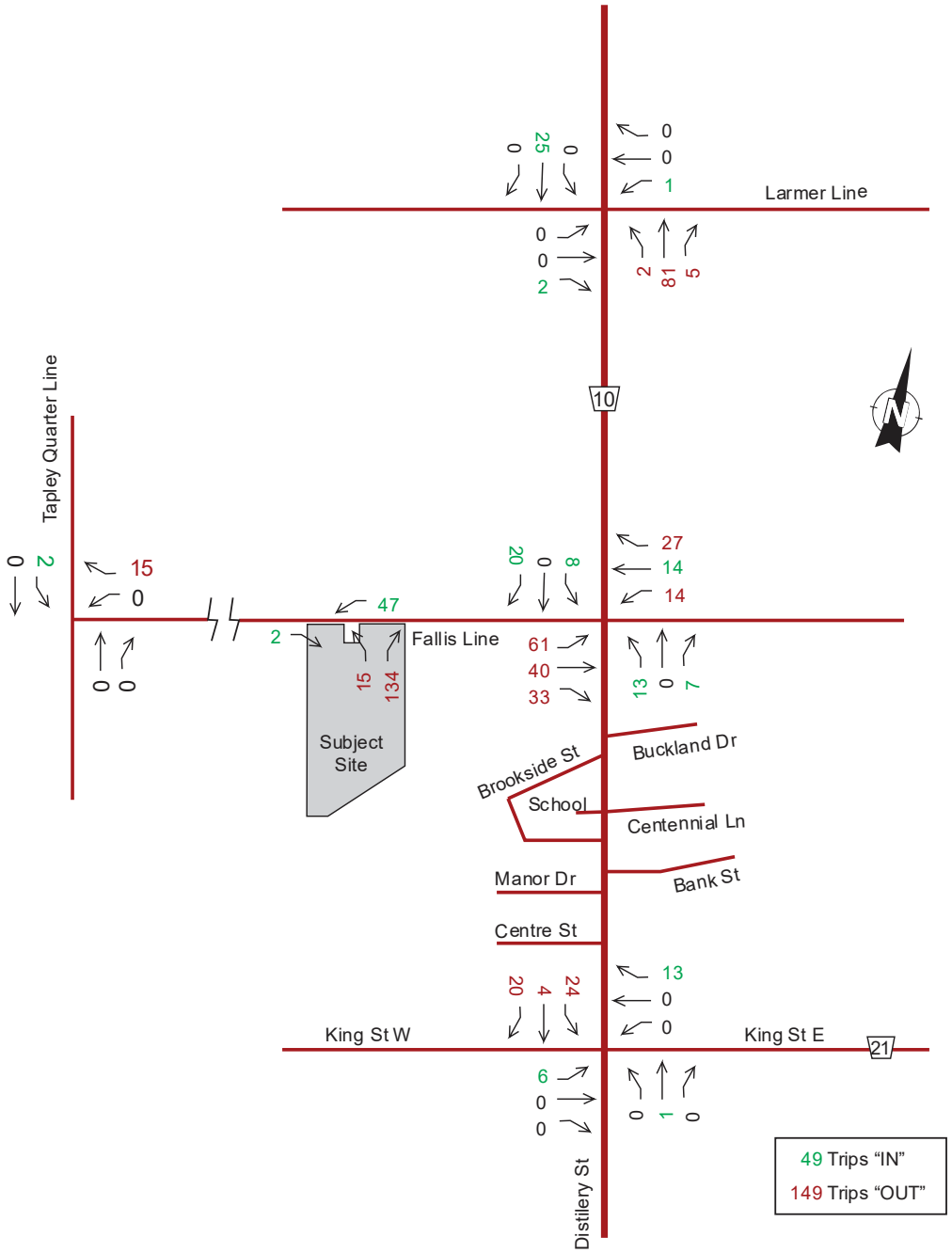



***Exhibit 14:*** *AM Peak Hour Development Trips - 2025.*

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

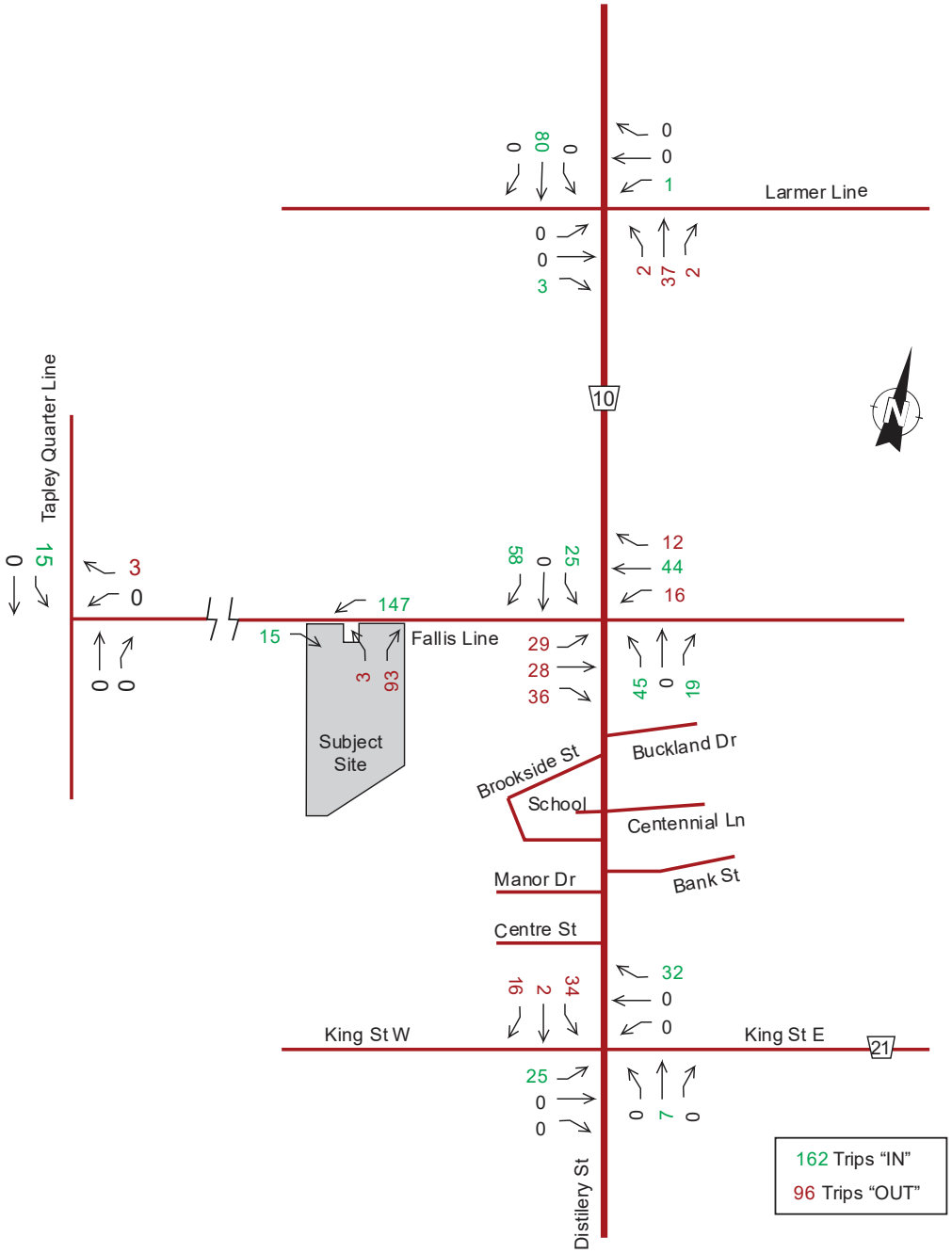



***Exhibit 15:*** *PM Peak Hour Development Trips - 2025.*

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

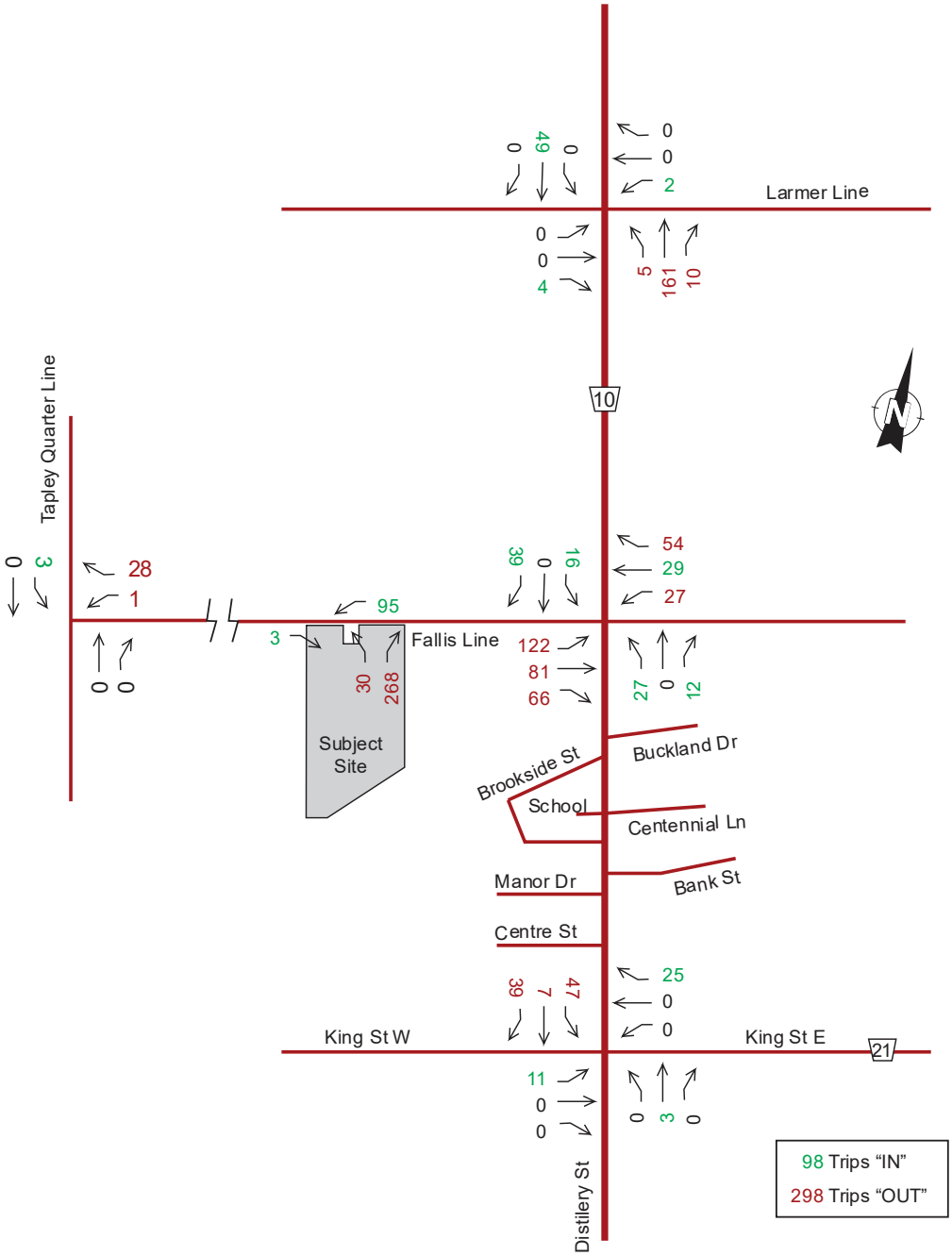



***Exhibit 17:*** *AM Peak Hour Development Trips - 2030.*

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

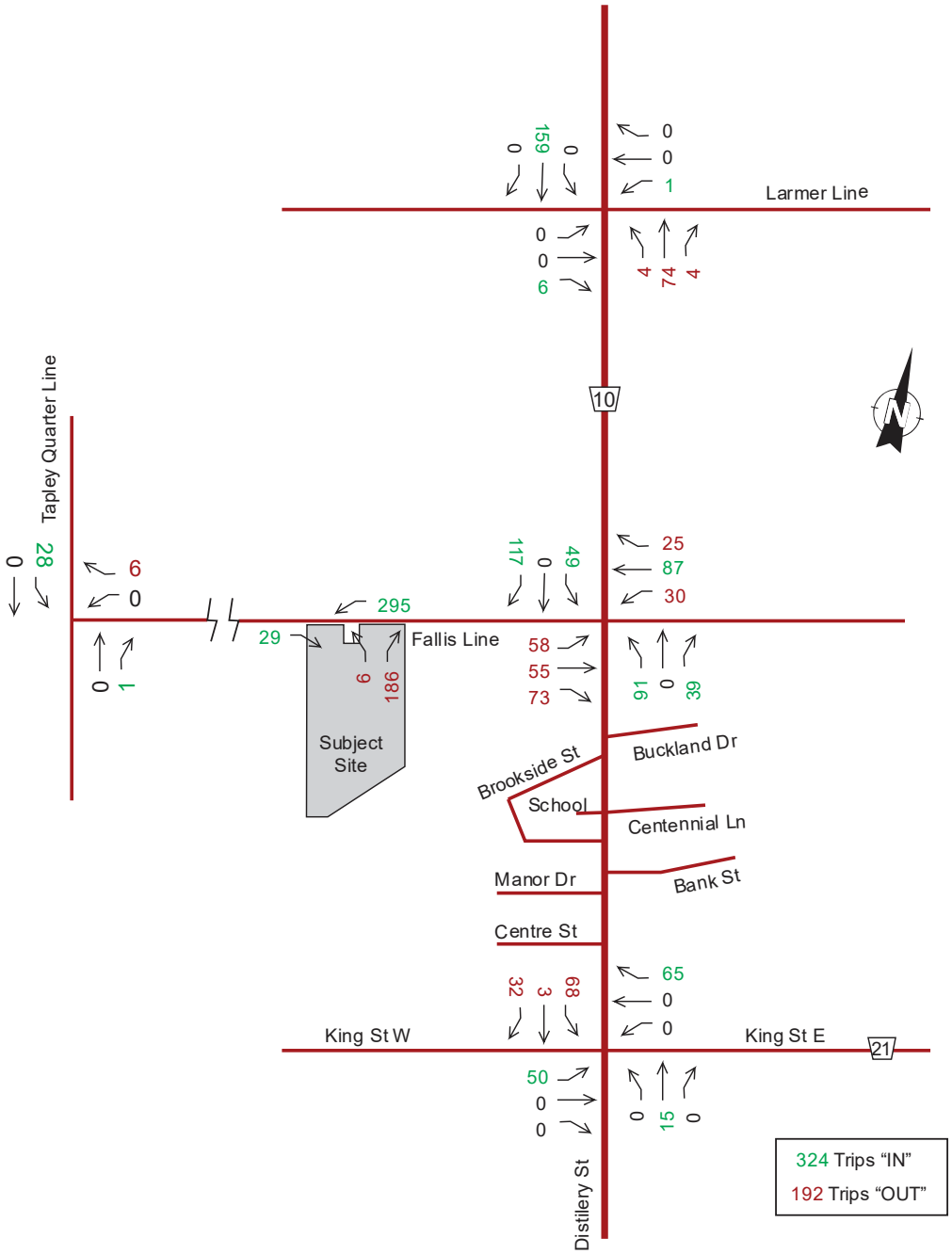



***Exhibit 18:*** *PM Peak Hour Development Trips - 2030.*

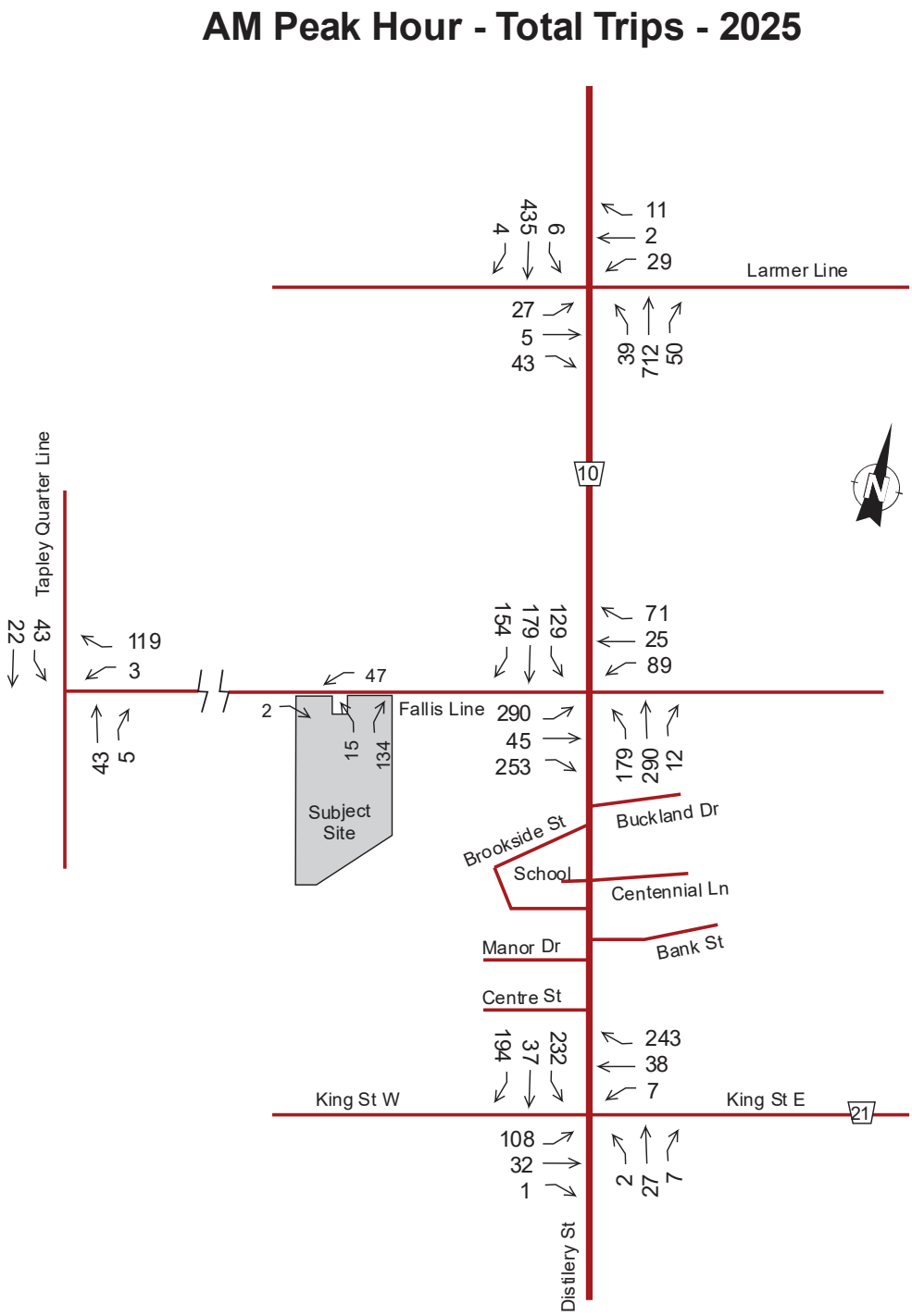



***Exhibit 20:*** *AM Peak Hour Total Trips - 2025.*

## PM Peak Hour - Total Trips - 2025

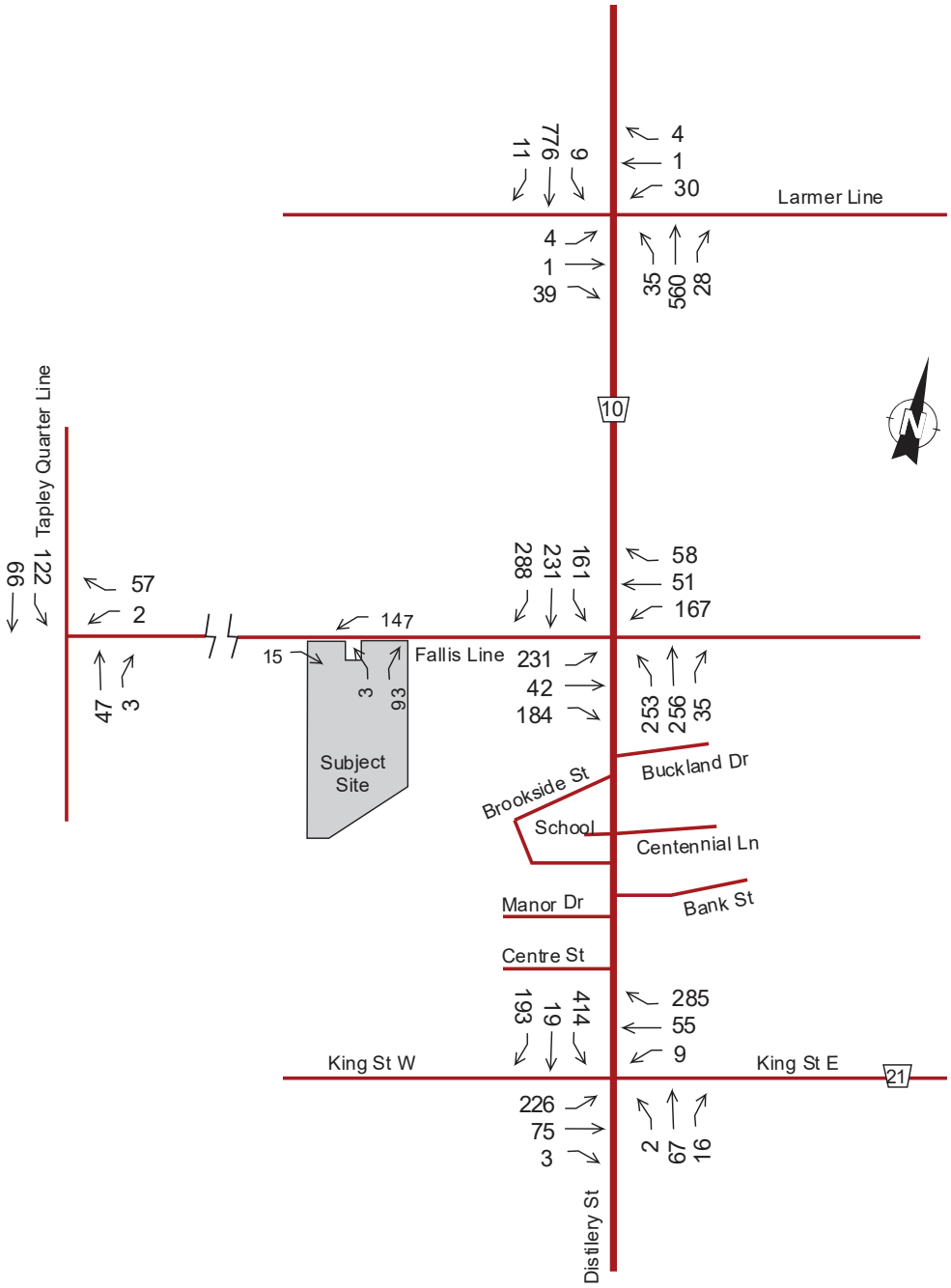



***Exhibit 21:*** *PM Peak Hour Total Trips - 2025.*

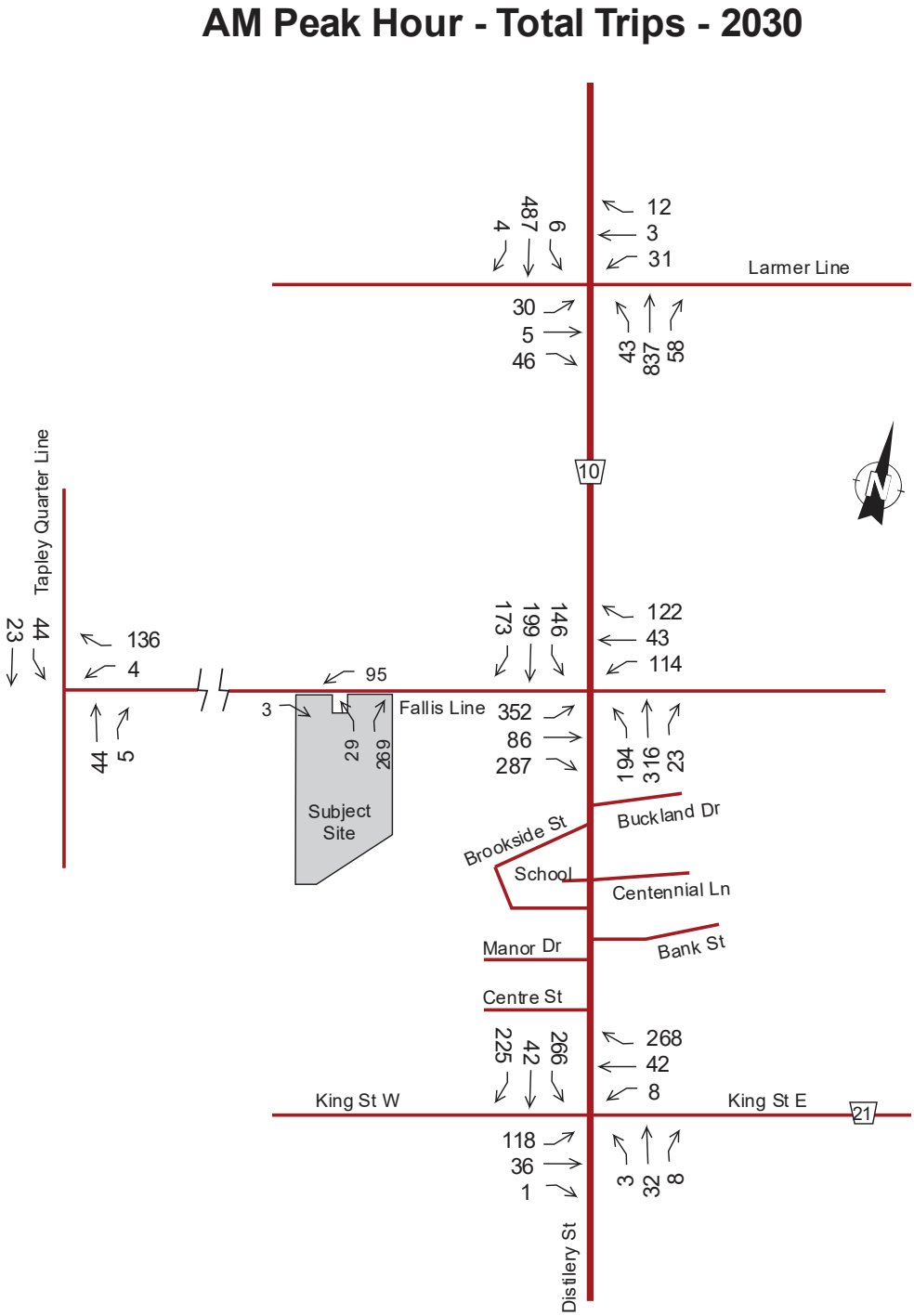



***Exhibit 23:*** *AM Peak Hour Total Trips - 2030.*

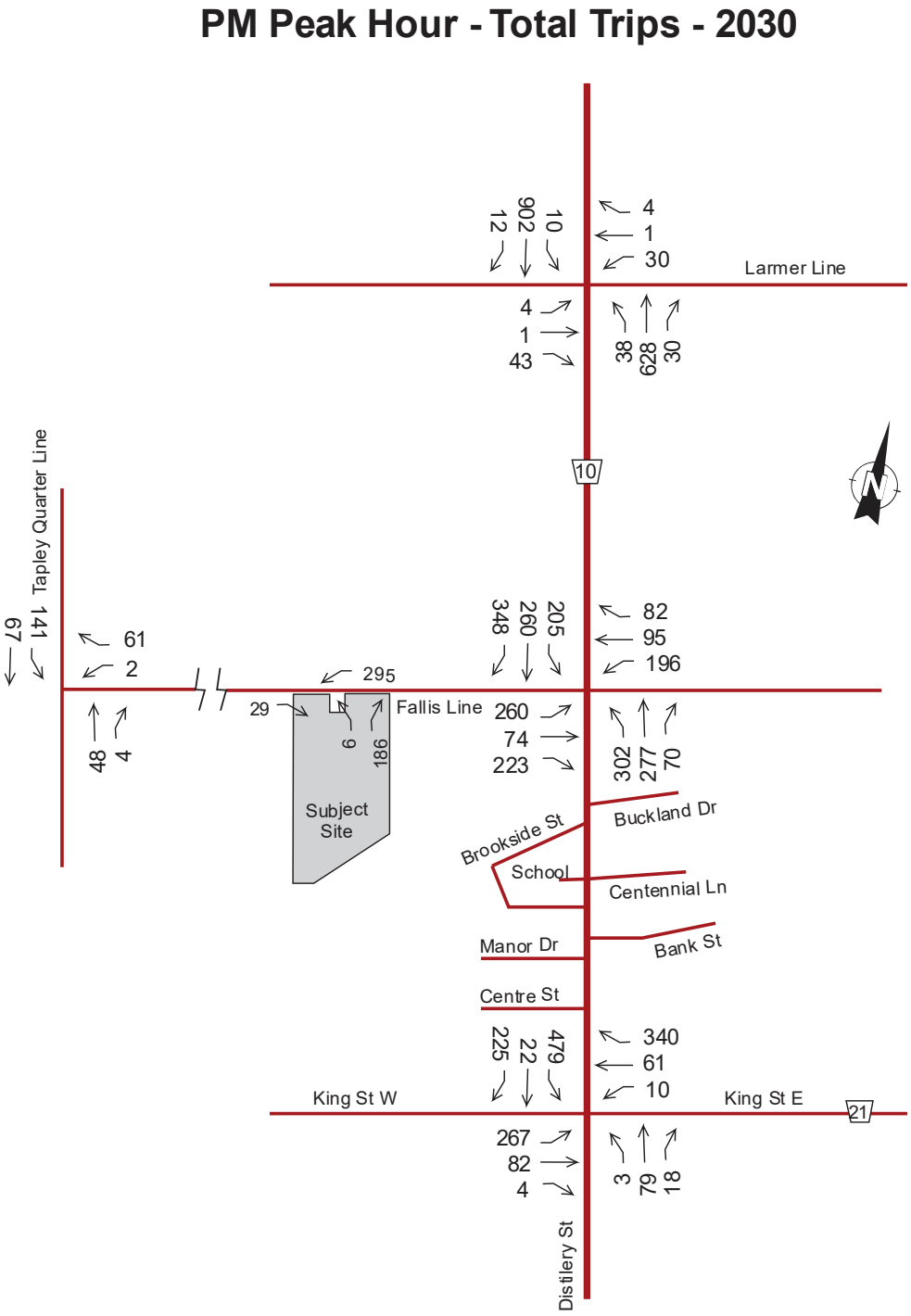



***Exhibit 24:*** *PM Peak Hour Total Trips - 2030.*

# 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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_____
Maitham Dinani, P.Eng.
Professional License #: 100192544

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<br>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

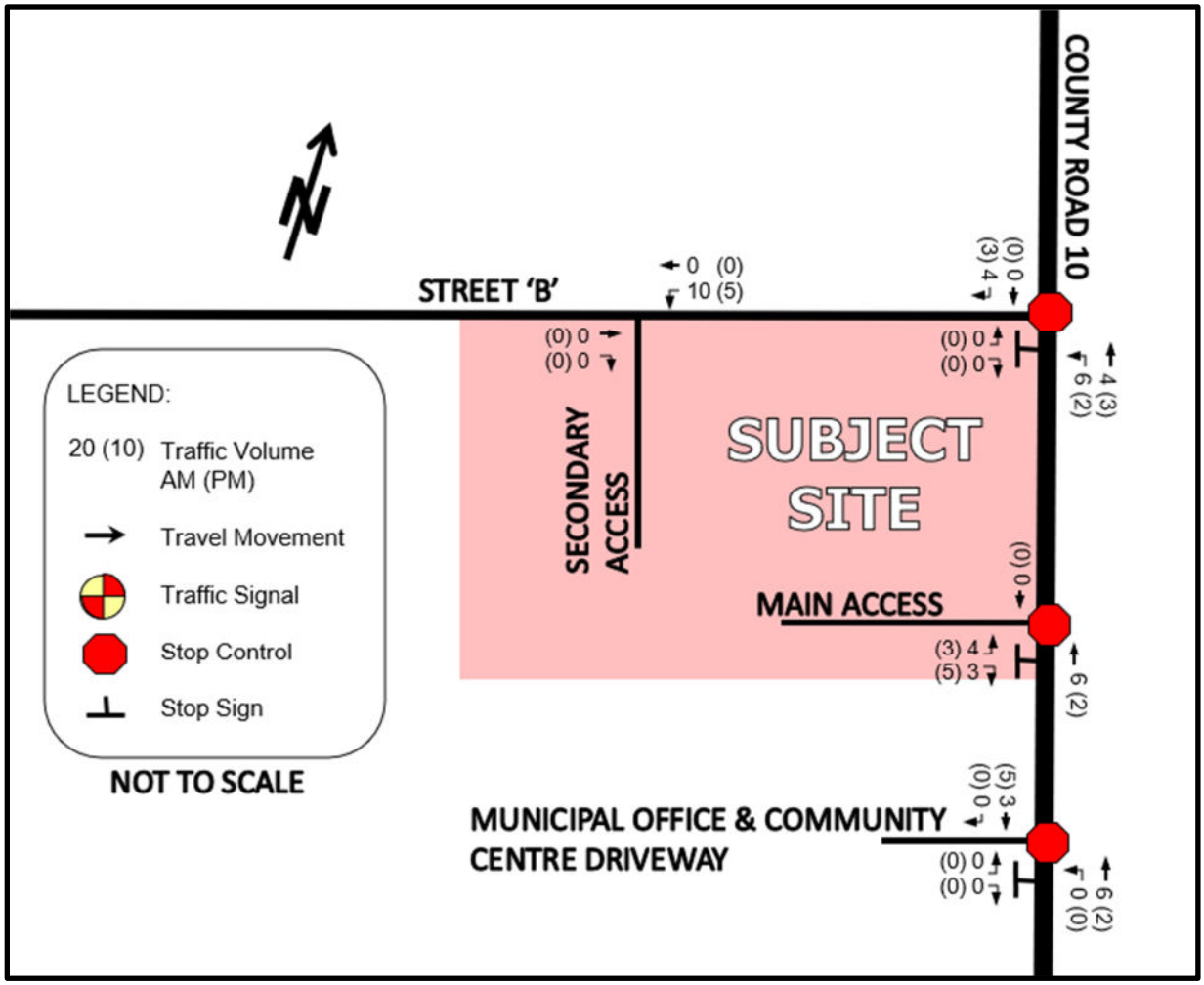
The distribution of traffic for the proposed development is based on the distribution of the existing traffic volumes within the study area. **Table 9** illustrates the calculation of the distribution of ingress and egress traffic for the proposed development.

**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

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

# Morning Peak Diagram

**Specified Period**
**From:** 7:00:00
**To:** 9:00:00

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

**Municipality:** Cavan-Monaghan
**Site #:** 2305000001
**Intersection:** County Rd 10 & Syer Line
**TFR File #:** 1
**Count date:** 1-Mar-23

**Weather conditions:**

**Person counted:**
**Person prepared:**
**Person checked:**

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

**Major Road:** County Rd 10 runs N/S

North Leg Total: 218
North Entering: 141
North Peds: 0
Peds Cross: ⋈

| | | | | |
|---|---|---|---|---|
| Heavys | 0 | 1 | 0 | 1 |
| Trucks | 0 | 0 | 0 | 0 |
| Cars | 6 | 75 | 59 | 140 |
| Totals | 6 | 76 | 59 | |

| | |
|---|---|
| Heavys | 8 |
| Trucks | 1 |
| Cars | 68 |
| Totals | 77 |

East Leg Total: 205
East Entering: 116
East Peds: 0
Peds Cross: ⧖

County Rd 10

| Heavys | Trucks | Cars | Totals |
|---|---|---|---|
| 2 | 0 | 20 | 22 |

| Cars | Trucks | Heavys | Totals |
|---|---|---|---|
| 3 | 0 | 1 | 4 |
| 3 | 0 | 1 | 4 |
| 103 | 1 | 4 | 108 |
| 109 | 1 | 6 | |

Syer Line

N
W E
S

| Heavys | Trucks | Cars | Totals |
|---|---|---|---|
| 1 | 0 | 6 | 7 |
| 1 | 0 | 4 | 5 |
| 1 | 0 | 22 | 23 |
| 3 | 0 | 32 | |

Highway 115 NB Ramp

| Cars | Trucks | Heavys | Totals |
|---|---|---|---|
| 88 | 0 | 1 | 89 |

County Rd 10

Peds Cross: ⧖
West Peds: 0
West Entering: 35
West Leg Total: 57

| | |
|---|---|
| Cars | 200 |
| Trucks | 1 |
| Heavys | 6 |
| Totals | 207 |

| | | | | |
|---|---|---|---|---|
| Cars | 11 | 59 | 25 | 95 |
| Trucks | 0 | 1 | 0 | 1 |
| Heavys | 1 | 6 | 0 | 7 |
| Totals | 12 | 66 | 25 | |

Peds Cross: ⋈
South Peds: 0
South Entering: 103
South Leg Total: 310

## Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

# Afternoon Peak Diagram

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

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

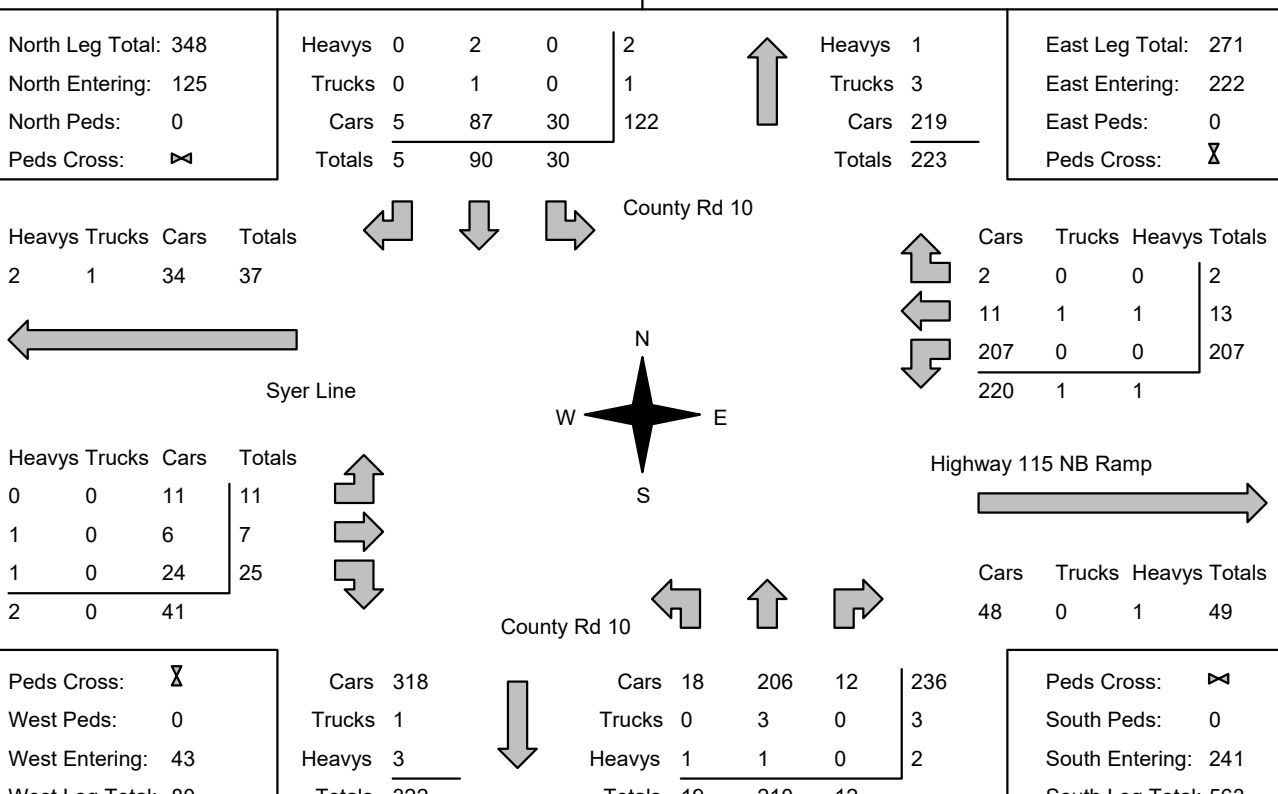
**Municipality:** Cavan-Monaghan
**Site #:** 2305000001
**Intersection:** County Rd 10 & Syer Line
**TFR File #:** 1
**Count date:** 1-Mar-23

**Weather conditions:**

**Person counted:**
**Person prepared:**
**Person checked:**

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

**Major Road:** County Rd 10 runs N/S




## Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

# Total Count Diagram

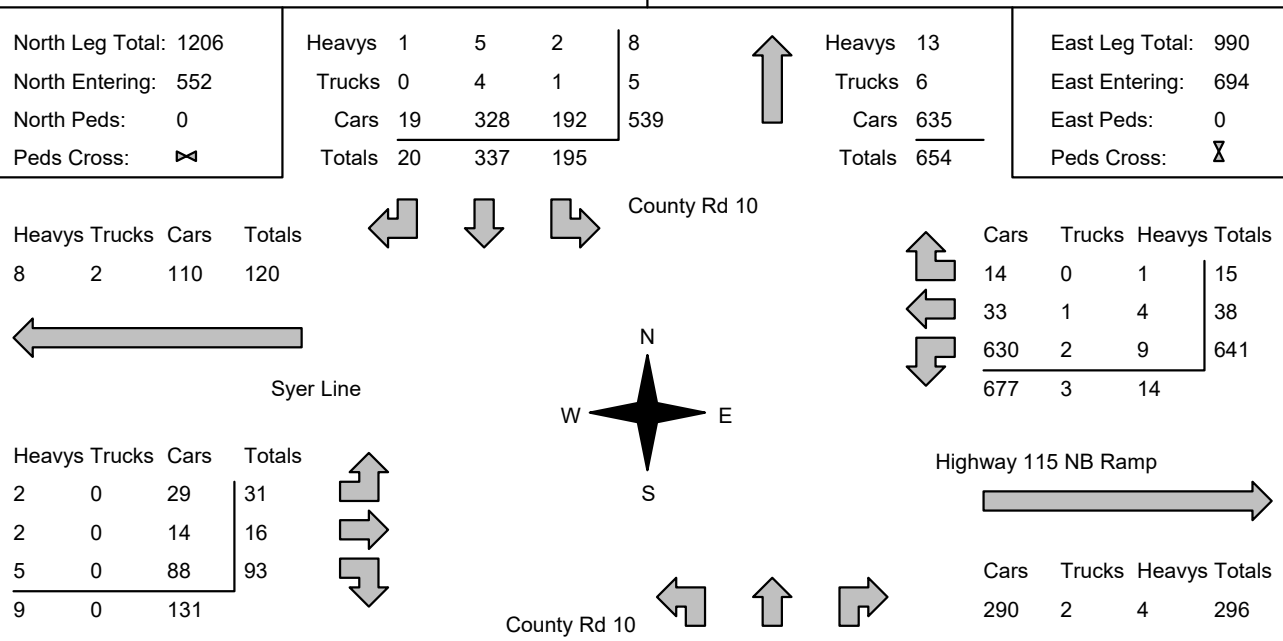
**Municipality:** Cavan-Monaghan
**Site #:** 2305000001
**Intersection:** County Rd 10 & Syer Line
**TFR File #:** 1
**Count date:** 1-Mar-23

**Weather conditions:**

**Person counted:**
**Person prepared:**
**Person checked:**

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

**Major Road:** County Rd 10 runs N/S




## Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

# Traffic Count Summary

**Intersection:** County Rd 10 & Syer Line | **Count Date:** 1-Mar-23 | **Municipality:** Cavan-Monaghan

## North Approach Totals

| Hour Ending | Includes Cars, Trucks, & Heavys | | | | Total Peds |
|---|---|---|---|---|---|
| | Left | Thru | Right | Grand Total | |
| *7:00:00* | *0* | *0* | *0* | *0* | *0* |
| *8:00:00* | *73* | *63* | *3* | *139* | *0* |
| *9:00:00* | *45* | *66* | *4* | *115* | *0* |
| *16:00:00* | *0* | *0* | *0* | *0* | *0* |
| *17:00:00* | *24* | *76* | *8* | *108* | *0* |
| *18:00:00* | *31* | *86* | *1* | *118* | *0* |
| *19:00:00* | *22* | *46* | *4* | *72* | *0* |
| Totals: | 195 | 337 | 20 | 552 | 0 |

North/South Total Approaches: 1307

## South Approach Totals

| Hour Ending | Includes Cars, Trucks, & Heavys | | | | Total Peds |
|---|---|---|---|---|---|
| | Left | Thru | Right | Grand Total | |
| *7:00:00* | *0* | *0* | *0* | *0* | *0* |
| *8:00:00* | *5* | *56* | *29* | *90* | *0* |
| *9:00:00* | *11* | *73* | *19* | *103* | *0* |
| *16:00:00* | *0* | *0* | *0* | *0* | *0* |
| *17:00:00* | *20* | *193* | *16* | *229* | *0* |
| *18:00:00* | *17* | *186* | *14* | *217* | *0* |
| *19:00:00* | *9* | *100* | *7* | *116* | *0* |
| S Totals: | 62 | 608 | 85 | 755 | 0 |

## East Approach Totals

| Hour Ending | Includes Cars, Trucks, & Heavys | | | | Total Peds |
|---|---|---|---|---|---|
| | Left | Thru | Right | Grand Total | |
| *7:00:00* | *0* | *0* | *0* | *0* | *0* |
| *8:00:00* | *85* | *5* | *5* | *95* | *0* |
| *9:00:00* | *98* | *4* | *2* | *104* | *0* |
| *16:00:00* | *0* | *0* | *0* | *0* | *0* |
| *17:00:00* | *185* | *18* | *1* | *204* | *0* |
| *18:00:00* | *178* | *5* | *2* | *185* | *0* |
| *19:00:00* | *95* | *6* | *5* | *106* | *0* |
| Totals: | 641 | 38 | 15 | 694 | 0 |

East/West Total Approaches: 834

## West Approach Totals

| Hour Ending | Includes Cars, Trucks, & Heavys | | | | Total Peds |
|---|---|---|---|---|---|
| | Left | Thru | Right | Grand Total | |
| *7:00:00* | *0* | *0* | *0* | *0* | *0* |
| *8:00:00* | *7* | *1* | *15* | *23* | *0* |
| *9:00:00* | *4* | *6* | *20* | *30* | *0* |
| *16:00:00* | *0* | *0* | *0* | *0* | *0* |
| *17:00:00* | *8* | *7* | *25* | *40* | *0* |
| *18:00:00* | *10* | *2* | *20* | *32* | *0* |
| *19:00:00* | *2* | *0* | *13* | *15* | *0* |
| W Totals: | 31 | 16 | 93 | 140 | 0 |

## Calculated Values for Traffic Crossing Major Street

| Hours Ending: | *7:00* | *8:00* | *9:00* | *16:00* | *17:00* | *18:00* | *19:00* | *0:00* |
|---|---|---|---|---|---|---|---|---|
| Crossing Values: | *0* | *97* | *108* | *0* | *211* | *193* | *103* | *0* |

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

**Count Date: 1-Mar-23** **Site #: 2305000001**

| 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 | 24 | 24 | 13 | 13 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:30:00 | 39 | 15 | 25 | 12 | 0 | 0 | 1 | 0 | 2 | 2 | 0 | 0 | 1 | 1 | 2 | 2 | 0 | 0 | 0 | 0 |
| 7:45:00 | 56 | 17 | 37 | 12 | 1 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 3 | 1 | 0 | 0 | 0 | 0 |
| 8:00:00 | 71 | 15 | 58 | 21 | 3 | 2 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| 8:15:00 | 83 | 12 | 77 | 19 | 6 | 3 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| 8:30:00 | 98 | 15 | 100 | 23 | 6 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| 8:45:00 | 110 | 12 | 111 | 11 | 6 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| 9:00:00 | 116 | 6 | 124 | 13 | 7 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| 9:15:00 | 116 | 0 | 124 | 0 | 7 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| 16:00:00 | 116 | 0 | 124 | 0 | 7 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| 16:15:00 | 122 | 6 | 141 | 17 | 8 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 1 | 1 | 0 | 0 |
| 16:30:00 | 132 | 10 | 155 | 14 | 9 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 1 | 0 | 0 | 0 |
| 16:45:00 | 138 | 6 | 180 | 25 | 11 | 2 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 1 | 0 | 0 | 0 |
| 17:00:00 | 140 | 2 | 200 | 20 | 14 | 3 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 1 | 0 | 0 | 0 |
| 17:15:00 | 150 | 10 | 220 | 20 | 14 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 1 | 0 | 0 | 0 |
| 17:30:00 | 162 | 12 | 242 | 22 | 14 | 0 | 1 | 0 | 3 | 1 | 0 | 0 | 1 | 0 | 5 | 2 | 1 | 0 | 0 | 0 |
| 17:45:00 | 169 | 7 | 257 | 15 | 15 | 1 | 1 | 0 | 4 | 1 | 0 | 0 | 1 | 0 | 5 | 0 | 1 | 0 | 0 | 0 |
| 18:00:00 | 171 | 2 | 282 | 25 | 15 | 0 | 1 | 0 | 4 | 0 | 0 | 0 | 1 | 0 | 5 | 0 | 1 | 0 | 0 | 0 |
| 18:15:00 | 175 | 4 | 298 | 16 | 16 | 1 | 1 | 0 | 4 | 0 | 0 | 0 | 1 | 0 | 5 | 0 | 1 | 0 | 0 | 0 |
| 18:30:00 | 180 | 5 | 311 | 13 | 17 | 1 | 1 | 0 | 4 | 0 | 0 | 0 | 1 | 0 | 5 | 0 | 1 | 0 | 0 | 0 |
| 18:45:00 | 186 | 6 | 320 | 9 | 17 | 0 | 1 | 0 | 4 | 0 | 0 | 0 | 1 | 0 | 5 | 0 | 1 | 0 | 0 | 0 |
| 19:00:00 | 192 | 6 | 328 | 8 | 19 | 2 | 1 | 0 | 4 | 0 | 0 | 0 | 2 | 1 | 5 | 0 | 1 | 0 | 0 | 0 |
| 19:15:00 | 192 | 0 | 328 | 0 | 19 | 0 | 1 | 0 | 4 | 0 | 0 | 0 | 2 | 0 | 5 | 0 | 1 | 0 | 0 | 0 |
| 19:15:15 | 192 | 0 | 328 | 0 | 19 | 0 | 1 | 0 | 4 | 0 | 0 | 0 | 2 | 0 | 5 | 0 | 1 | 0 | 0 | 0 |

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

**Count Date: 1-Mar-23 Site #: 2305000001**

| 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 | 5 | 5 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 0 |
| 7:30:00 | 23 | 18 | 1 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 2 | 0 | 0 | 0 | 0 | 0 |
| 7:45:00 | 46 | 23 | 2 | 1 | 4 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 5 | 2 | 2 | 0 | 1 | 1 | 0 | 0 |
| 8:00:00 | 79 | 33 | 3 | 1 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 2 | 0 | 1 | 0 | 0 | 0 |
| 8:15:00 | 99 | 20 | 4 | 1 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 2 | 0 | 1 | 0 | 0 | 0 |
| 8:30:00 | 126 | 27 | 4 | 0 | 5 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 7 | 2 | 3 | 1 | 1 | 0 | 0 | 0 |
| 8:45:00 | 151 | 25 | 6 | 2 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 3 | 0 | 1 | 0 | 0 | 0 |
| 9:00:00 | 173 | 22 | 6 | 0 | 6 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 9 | 2 | 3 | 0 | 1 | 0 | 0 | 0 |
| 9:15:00 | 173 | 0 | 6 | 0 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 3 | 0 | 1 | 0 | 0 | 0 |
| 16:00:00 | 173 | 0 | 6 | 0 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 3 | 0 | 1 | 0 | 0 | 0 |
| 16:15:00 | 209 | 36 | 10 | 4 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 3 | 0 | 1 | 0 | 0 | 0 |
| 16:30:00 | 248 | 39 | 16 | 6 | 7 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 3 | 0 | 1 | 0 | 0 | 0 |
| 16:45:00 | 301 | 53 | 21 | 5 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 3 | 0 | 1 | 0 | 0 | 0 |
| 17:00:00 | 358 | 57 | 23 | 2 | 7 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 9 | 0 | 3 | 0 | 1 | 0 | 0 | 0 |
| 17:15:00 | 404 | 46 | 26 | 3 | 9 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 9 | 0 | 3 | 0 | 1 | 0 | 0 | 0 |
| 17:30:00 | 455 | 51 | 27 | 1 | 9 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 9 | 0 | 4 | 1 | 1 | 0 | 0 | 0 |
| 17:45:00 | 492 | 37 | 27 | 0 | 9 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 9 | 0 | 4 | 0 | 1 | 0 | 0 | 0 |
| 18:00:00 | 535 | 43 | 27 | 0 | 9 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 9 | 0 | 4 | 0 | 1 | 0 | 0 | 0 |
| 18:15:00 | 562 | 27 | 28 | 1 | 9 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 9 | 0 | 4 | 0 | 1 | 0 | 0 | 0 |
| 18:30:00 | 585 | 23 | 31 | 3 | 11 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 9 | 0 | 4 | 0 | 1 | 0 | 0 | 0 |
| 18:45:00 | 606 | 21 | 32 | 1 | 12 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 9 | 0 | 4 | 0 | 1 | 0 | 0 | 0 |
| 19:00:00 | 630 | 24 | 33 | 1 | 14 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 9 | 0 | 4 | 0 | 1 | 0 | 0 | 0 |
| 19:15:00 | 630 | 0 | 33 | 0 | 14 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 9 | 0 | 4 | 0 | 1 | 0 | 0 | 0 |
| 19:15:15 | 630 | 0 | 33 | 0 | 14 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 9 | 0 | 4 | 0 | 1 | 0 | 0 | 0 |

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

**Count Date: 1-Mar-23** **Site #: 2305000001**

| 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 | 12 | 12 | 10 | 10 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:30:00 | 1 | 1 | 25 | 13 | 16 | 6 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:45:00 | 4 | 3 | 34 | 9 | 21 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 |
| 8:00:00 | 5 | 1 | 50 | 16 | 29 | 8 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 4 | 2 | 0 | 0 | 0 | 0 |
| 8:15:00 | 9 | 4 | 66 | 16 | 36 | 7 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 1 | 6 | 2 | 0 | 0 | 0 | 0 |
| 8:30:00 | 12 | 3 | 84 | 18 | 41 | 5 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 6 | 0 | 0 | 0 | 0 | 0 |
| 8:45:00 | 14 | 2 | 105 | 21 | 46 | 5 | 0 | 0 | 2 | 0 | 1 | 1 | 1 | 0 | 9 | 3 | 0 | 0 | 0 | 0 |
| 9:00:00 | 15 | 1 | 118 | 13 | 47 | 1 | 0 | 0 | 2 | 0 | 1 | 0 | 1 | 0 | 9 | 0 | 0 | 0 | 0 | 0 |
| 9:15:00 | 15 | 0 | 118 | 0 | 47 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 1 | 0 | 9 | 0 | 0 | 0 | 0 | 0 |
| 16:00:00 | 15 | 0 | 118 | 0 | 47 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 1 | 0 | 9 | 0 | 0 | 0 | 0 | 0 |
| 16:15:00 | 21 | 6 | 156 | 38 | 52 | 5 | 0 | 0 | 2 | 0 | 1 | 0 | 1 | 0 | 9 | 0 | 0 | 0 | 0 | 0 |
| 16:30:00 | 25 | 4 | 205 | 49 | 57 | 5 | 0 | 0 | 2 | 0 | 1 | 0 | 1 | 0 | 9 | 0 | 0 | 0 | 0 | 0 |
| 16:45:00 | 30 | 5 | 255 | 50 | 60 | 3 | 0 | 0 | 2 | 0 | 1 | 0 | 1 | 0 | 10 | 1 | 0 | 0 | 0 | 0 |
| 17:00:00 | 35 | 5 | 310 | 55 | 63 | 3 | 0 | 0 | 2 | 0 | 1 | 0 | 1 | 0 | 10 | 0 | 0 | 0 | 0 | 0 |
| 17:15:00 | 41 | 6 | 357 | 47 | 66 | 3 | 0 | 0 | 2 | 0 | 1 | 0 | 1 | 0 | 10 | 0 | 0 | 0 | 0 | 0 |
| 17:30:00 | 43 | 2 | 411 | 54 | 69 | 3 | 0 | 0 | 5 | 3 | 1 | 0 | 2 | 1 | 10 | 0 | 0 | 0 | 0 | 0 |
| 17:45:00 | 46 | 3 | 450 | 39 | 73 | 4 | 0 | 0 | 5 | 0 | 1 | 0 | 2 | 0 | 10 | 0 | 0 | 0 | 0 | 0 |
| 18:00:00 | 51 | 5 | 492 | 42 | 77 | 4 | 0 | 0 | 6 | 1 | 1 | 0 | 2 | 0 | 10 | 0 | 0 | 0 | 0 | 0 |
| 18:15:00 | 52 | 1 | 534 | 42 | 81 | 4 | 1 | 1 | 6 | 0 | 1 | 0 | 2 | 0 | 10 | 0 | 0 | 0 | 0 | 0 |
| 18:30:00 | 54 | 2 | 554 | 20 | 83 | 2 | 1 | 0 | 6 | 0 | 1 | 0 | 3 | 1 | 10 | 0 | 0 | 0 | 0 | 0 |
| 18:45:00 | 56 | 2 | 578 | 24 | 84 | 1 | 1 | 0 | 6 | 0 | 1 | 0 | 3 | 0 | 10 | 0 | 0 | 0 | 0 | 0 |
| 19:00:00 | 58 | 2 | 592 | 14 | 84 | 0 | 1 | 0 | 6 | 0 | 1 | 0 | 3 | 0 | 10 | 0 | 0 | 0 | 0 | 0 |
| 19:15:00 | 58 | 0 | 592 | 0 | 84 | 0 | 1 | 0 | 6 | 0 | 1 | 0 | 3 | 0 | 10 | 0 | 0 | 0 | 0 | 0 |
| 19:15:15 | 58 | 0 | 592 | 0 | 84 | 0 | 1 | 0 | 6 | 0 | 1 | 0 | 3 | 0 | 10 | 0 | 0 | 0 | 0 | 0 |

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

**Count Date: 1-Mar-23** **Site #: 2305000001**

| 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 | 1 | 1 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:30:00 | 3 | 2 | 0 | 0 | 5 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 |
| 7:45:00 | 4 | 1 | 1 | 1 | 11 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 8:00:00 | 5 | 1 | 1 | 0 | 14 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| 8:15:00 | 7 | 2 | 3 | 2 | 22 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 1 | 0 | 0 |
| 8:30:00 | 9 | 2 | 4 | 1 | 27 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 1 | 2 | 0 | 0 | 0 |
| 8:45:00 | 9 | 0 | 5 | 1 | 29 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 2 | 0 | 0 | 0 |
| 9:00:00 | 9 | 0 | 6 | 1 | 33 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 2 | 0 | 0 | 0 |
| 9:15:00 | 9 | 0 | 6 | 0 | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 2 | 0 | 0 | 0 |
| 16:00:00 | 9 | 0 | 6 | 0 | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 2 | 0 | 0 | 0 |
| 16:15:00 | 11 | 2 | 8 | 2 | 41 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 3 | 1 | 0 | 0 |
| 16:30:00 | 11 | 0 | 8 | 0 | 47 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 3 | 0 | 0 | 0 |
| 16:45:00 | 13 | 2 | 12 | 4 | 52 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 3 | 0 | 0 | 0 |
| 17:00:00 | 17 | 4 | 13 | 1 | 57 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 3 | 0 | 0 | 0 |
| 17:15:00 | 21 | 4 | 13 | 0 | 66 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 3 | 0 | 0 | 0 |
| 17:30:00 | 22 | 1 | 14 | 1 | 71 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 1 | 4 | 1 | 0 | 0 |
| 17:45:00 | 23 | 1 | 14 | 0 | 75 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 4 | 0 | 0 | 0 |
| 18:00:00 | 27 | 4 | 14 | 0 | 76 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 4 | 0 | 0 | 0 |
| 18:15:00 | 27 | 0 | 14 | 0 | 81 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 4 | 0 | 0 | 0 |
| 18:30:00 | 27 | 0 | 14 | 0 | 84 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 5 | 1 | 0 | 0 |
| 18:45:00 | 27 | 0 | 14 | 0 | 87 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 5 | 0 | 0 | 0 |
| 19:00:00 | 29 | 2 | 14 | 0 | 88 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 5 | 0 | 0 | 0 |
| 19:15:00 | 29 | 0 | 14 | 0 | 88 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 5 | 0 | 0 | 0 |
| 19:15:15 | 29 | 0 | 14 | 0 | 88 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 5 | 0 | 0 | 0 |

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

# Morning Peak Diagram

**Specified Period**
**From:** 7:00:00
**To:** 9:00:00

**One Hour Peak**
**From:** 7:45:00
**To:** 8:45:00

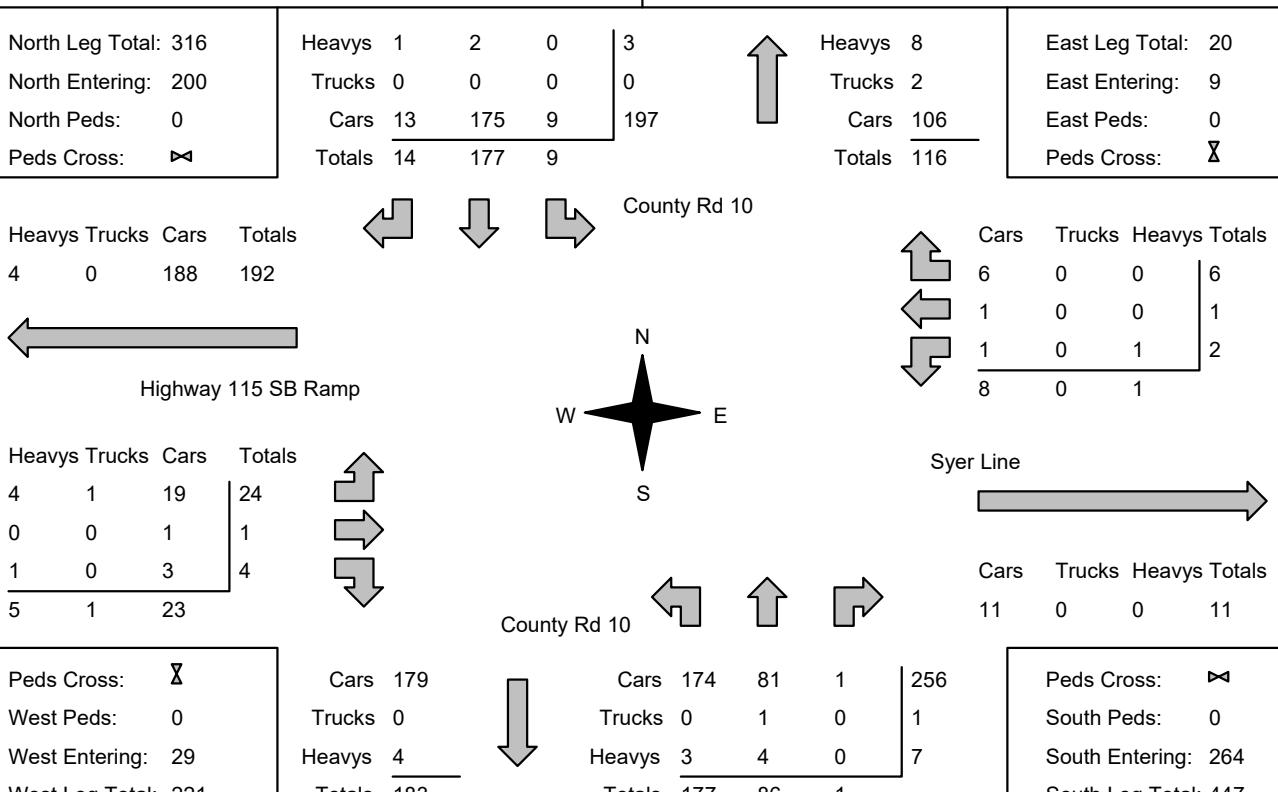
**Municipality:** Cavan-Monaghan
**Site #:** 2305000002
**Intersection:** County Rd 10 & Syer Line
**TFR File #:** 1
**Count date:** 1-Mar-23

**Weather conditions:**

**Person counted:**
**Person prepared:**
**Person checked:**

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

**Major Road:** County Rd 10 runs N/S




## Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

# Afternoon Peak Diagram

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

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

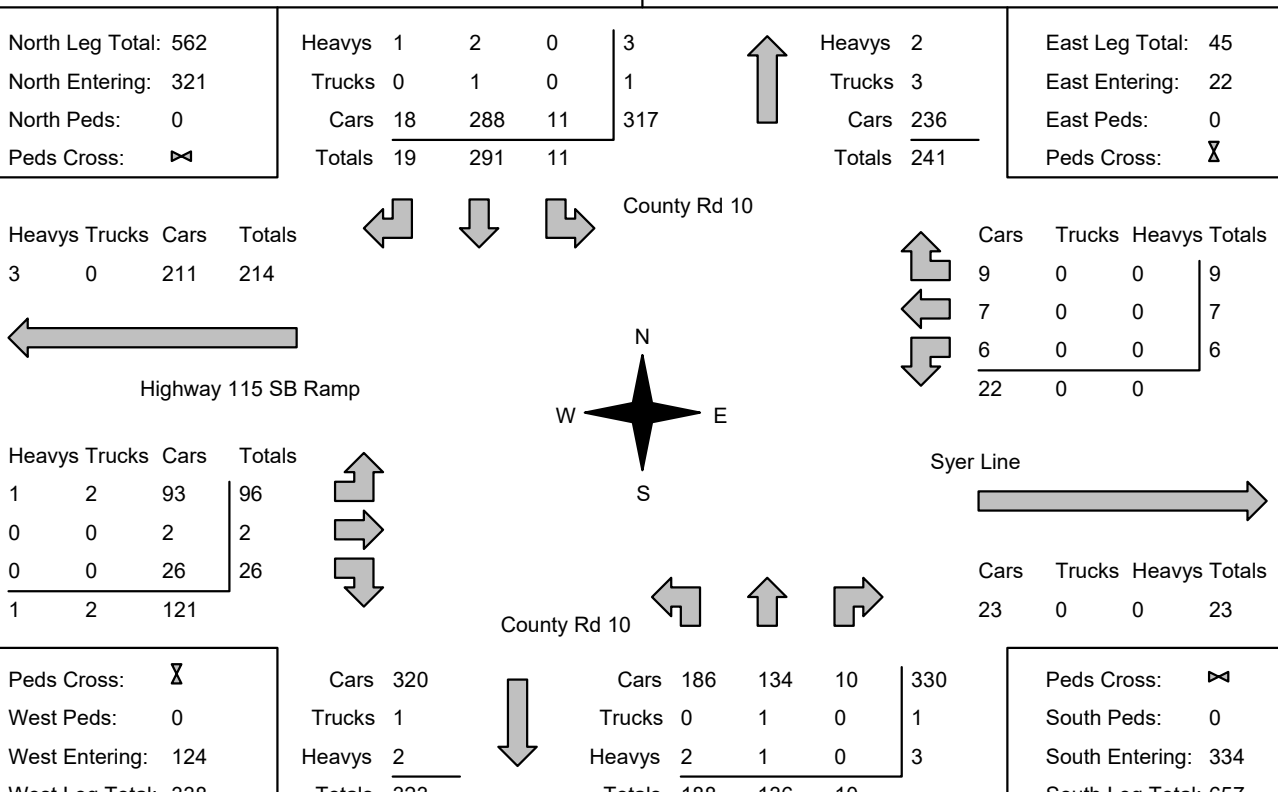
**Municipality:** Cavan-Monaghan
**Site #:** 2305000002
**Intersection:** County Rd 10 & Syer Line
**TFR File #:** 1
**Count date:** 1-Mar-23

**Weather conditions:**

**Person counted:**
**Person prepared:**
**Person checked:**

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

**Major Road:** County Rd 10 runs N/S




## Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

# Total Count Diagram

**Municipality:** Cavan-Monaghan
**Site #:** 2305000002
**Intersection:** County Rd 10 & Syer Line
**TFR File #:** 1
**Count date:** 1-Mar-23

**Weather conditions:**

**Person counted:**
**Person prepared:**
**Person checked:**

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

**Major Road:** County Rd 10 runs N/S

North Leg Total: 1823
North Entering: 1071
North Peds: 0
Peds Cross: ⋈

| | | | | |
|---|---|---|---|---|
| Heavys | 4 | 15 | 0 | 19 |
| Trucks | 0 | 6 | 0 | 6 |
| Cars | 65 | 948 | 33 | 1046 |
| Totals | 69 | 969 | 33 | |

| | |
|---|---|
| Heavys | 13 |
| Trucks | 8 |
| Cars | 731 |
| Totals | 752 |

East Leg Total: 118
East Entering: 58
East Peds: 0
Peds Cross: ⧖

| Heavys | Trucks | Cars | Totals |
|---|---|---|---|
| 14 | 1 | 703 | 718 |

Highway 115 SB Ramp

County Rd 10

| Cars | Trucks | Heavys | Totals |
|---|---|---|---|
| 30 | 0 | 1 | 31 |
| 11 | 0 | 0 | 11 |
| 14 | 0 | 2 | 16 |
| 55 | 0 | 3 | |

N
W E
S

| Heavys | Trucks | Cars | Totals |
|---|---|---|---|
| 7 | 5 | 288 | 300 |
| 0 | 0 | 10 | 10 |
| 2 | 0 | 68 | 70 |
| 9 | 5 | 366 | |

Syer Line

| Cars | Trucks | Heavys | Totals |
|---|---|---|---|
| 59 | 0 | 1 | 60 |

County Rd 10

Peds Cross: ⧖
West Peds: 0
West Entering: 380
West Leg Total: 1098

| | |
|---|---|
| Cars | 1030 |
| Trucks | 6 |
| Heavys | 19 |
| Totals | 1055 |

| | | | | |
|---|---|---|---|---|
| Cars | 627 | 413 | 16 | 1056 |
| Trucks | 1 | 3 | 0 | 4 |
| Heavys | 10 | 5 | 1 | 16 |
| Totals | 638 | 421 | 17 | |

Peds Cross: ⋈
South Peds: 0
South Entering: 1076
South Leg Total: 2131

## Comments

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

# Traffic Count Summary

**Intersection:** County Rd 10 & Syer Line | **Count Date:** 1-Mar-23 | **Municipality:** Cavan-Monaghan

## North Approach Totals

| Hour Ending | Includes Cars, Trucks, & Heavys | | | | Total Peds |
|---|---|---|---|---|---|
| | Left | Thru | Right | Grand Total | |
| *7:00:00* | *0* | *0* | *0* | *0* | *0* |
| *8:00:00* | *5* | *147* | *12* | *164* | *0* |
| *9:00:00* | *10* | *159* | *14* | *183* | *0* |
| *16:00:00* | *0* | *0* | *0* | *0* | *0* |
| *17:00:00* | *9* | *263* | *15* | *287* | *0* |
| *18:00:00* | *7* | *258* | *17* | *282* | *0* |
| *19:00:00* | *2* | *142* | *11* | *155* | *0* |
| Totals: | 33 | 969 | 69 | 1071 | 0 |

North/South Total Approaches: 2147

## South Approach Totals

| Hour Ending | Includes Cars, Trucks, & Heavys | | | | Total Peds |
|---|---|---|---|---|---|
| | Left | Thru | Right | Grand Total | |
| *7:00:00* | *0* | *0* | *0* | *0* | *0* |
| *8:00:00* | *124* | *62* | *1* | *187* | *0* |
| *9:00:00* | *162* | *81* | *2* | *245* | *0* |
| *16:00:00* | *0* | *0* | *0* | *0* | *0* |
| *17:00:00* | *170* | *120* | *9* | *299* | *0* |
| *18:00:00* | *119* | *110* | *4* | *233* | *0* |
| *19:00:00* | *63* | *48* | *1* | *112* | *0* |
| S Totals: | 638 | 421 | 17 | 1076 | 0 |

## East Approach Totals

| Hour Ending | Includes Cars, Trucks, & Heavys | | | | Total Peds |
|---|---|---|---|---|---|
| | Left | Thru | Right | Grand Total | |
| *7:00:00* | *0* | *0* | *0* | *0* | *0* |
| *8:00:00* | *2* | *0* | *7* | *9* | *0* |
| *9:00:00* | *3* | *2* | *5* | *10* | *0* |
| *16:00:00* | *0* | *0* | *0* | *0* | *0* |
| *17:00:00* | *5* | *4* | *10* | *19* | *0* |
| *18:00:00* | *4* | *4* | *8* | *16* | *0* |
| *19:00:00* | *2* | *1* | *1* | *4* | *0* |
| Totals: | 16 | 11 | 31 | 58 | 0 |

East/West Total Approaches: 438

## West Approach Totals

| Hour Ending | Includes Cars, Trucks, & Heavys | | | | Total Peds |
|---|---|---|---|---|---|
| | Left | Thru | Right | Grand Total | |
| *7:00:00* | *0* | *0* | *0* | *0* | *0* |
| *8:00:00* | *18* | *2* | *5* | *25* | *0* |
| *9:00:00* | *17* | *1* | *8* | *26* | *0* |
| *16:00:00* | *0* | *0* | *0* | *0* | *0* |
| *17:00:00* | *99* | *4* | *20* | *123* | *0* |
| *18:00:00* | *100* | *2* | *29* | *131* | *0* |
| *19:00:00* | *66* | *1* | *8* | *75* | *0* |
| W Totals: | 300 | 10 | 70 | 380 | 0 |

## Calculated Values for Traffic Crossing Major Street

| Hours Ending: | *7:00* | *8:00* | *9:00* | *16:00* | *17:00* | *18:00* | *19:00* | *0:00* |
|---|---|---|---|---|---|---|---|---|
| Crossing Values: | *0* | *22* | *22* | *0* | *108* | *108* | *69* | *0* |

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

**Count Date: 1-Mar-23 Site #: 2305000002**

| 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 | 18 | 18 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 |
| 7:30:00 | 1 | 1 | 49 | 31 | 4 | 2 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 6 | 4 | 0 | 0 | 0 | 0 |
| 7:45:00 | 2 | 1 | 83 | 34 | 10 | 6 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 9 | 3 | 0 | 0 | 0 | 0 |
| 8:00:00 | 5 | 3 | 135 | 52 | 12 | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 |
| 8:15:00 | 7 | 2 | 174 | 39 | 18 | 6 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 1 | 1 | 0 | 0 |
| 8:30:00 | 9 | 2 | 225 | 51 | 21 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 10 | 1 | 1 | 0 | 0 | 0 |
| 8:45:00 | 11 | 2 | 258 | 33 | 23 | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 11 | 1 | 1 | 0 | 0 | 0 |
| 9:00:00 | 15 | 4 | 290 | 32 | 25 | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 13 | 2 | 1 | 0 | 0 | 0 |
| 9:15:00 | 15 | 0 | 290 | 0 | 25 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 1 | 0 | 0 | 0 |
| 16:00:00 | 15 | 0 | 290 | 0 | 25 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 1 | 0 | 0 | 0 |
| 16:15:00 | 18 | 3 | 343 | 53 | 29 | 4 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 2 | 1 | 0 | 0 |
| 16:30:00 | 19 | 1 | 399 | 56 | 32 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 2 | 0 | 0 | 0 |
| 16:45:00 | 22 | 3 | 474 | 75 | 37 | 5 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 2 | 0 | 0 | 0 |
| 17:00:00 | 24 | 2 | 553 | 79 | 39 | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 2 | 0 | 0 | 0 |
| 17:15:00 | 26 | 2 | 618 | 65 | 46 | 7 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 2 | 0 | 0 | 0 |
| 17:30:00 | 30 | 4 | 687 | 69 | 50 | 4 | 0 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 15 | 2 | 3 | 1 | 0 | 0 |
| 17:45:00 | 30 | 0 | 739 | 52 | 53 | 3 | 0 | 0 | 6 | 2 | 0 | 0 | 0 | 0 | 15 | 0 | 3 | 0 | 0 | 0 |
| 18:00:00 | 31 | 1 | 806 | 67 | 55 | 2 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 3 | 0 | 0 | 0 |
| 18:15:00 | 32 | 1 | 851 | 45 | 58 | 3 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 3 | 0 | 0 | 0 |
| 18:30:00 | 33 | 1 | 888 | 37 | 60 | 2 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 4 | 1 | 0 | 0 |
| 18:45:00 | 33 | 0 | 918 | 30 | 64 | 4 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 4 | 0 | 0 | 0 |
| 19:00:00 | 33 | 0 | 948 | 30 | 65 | 1 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 4 | 0 | 0 | 0 |
| 19:15:00 | 33 | 0 | 948 | 0 | 65 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 4 | 0 | 0 | 0 |
| 19:15:15 | 33 | 0 | 948 | 0 | 65 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 4 | 0 | 0 | 0 |

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

**Count Date: 1-Mar-23 Site #: 2305000002**

| 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 | 0 | 0 | 0 | 0 | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:30:00 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:45:00 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 |
| 8:00:00 | 0 | 0 | 0 | 0 | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| 8:15:00 | 0 | 0 | 0 | 0 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 8:30:00 | 0 | 0 | 0 | 0 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 8:45:00 | 1 | 1 | 1 | 1 | 10 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 9:00:00 | 3 | 2 | 2 | 1 | 11 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 9:15:00 | 3 | 0 | 2 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 16:00:00 | 3 | 0 | 2 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 16:15:00 | 4 | 1 | 3 | 1 | 12 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 16:30:00 | 6 | 2 | 3 | 0 | 17 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 16:45:00 | 6 | 0 | 4 | 1 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 17:00:00 | 8 | 2 | 6 | 2 | 21 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 17:15:00 | 12 | 4 | 9 | 3 | 22 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 17:30:00 | 12 | 0 | 10 | 1 | 26 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 17:45:00 | 12 | 0 | 10 | 0 | 27 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 18:00:00 | 12 | 0 | 10 | 0 | 29 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 18:15:00 | 14 | 2 | 10 | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 18:30:00 | 14 | 0 | 10 | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 18:45:00 | 14 | 0 | 10 | 0 | 30 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 19:00:00 | 14 | 0 | 11 | 1 | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 19:15:00 | 14 | 0 | 11 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 19:15:15 | 14 | 0 | 11 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

**Count Date: 1-Mar-23** **Site #: 2305000002**

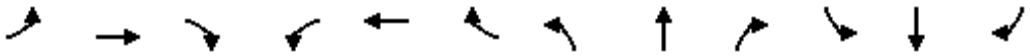
| Interval Time | Passenger Cars - South Approach | | | | | | Trucks - South Approach | | | | | | Heavys - South Approach | | | | | | Pedestrians | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | | Thru | | Right | | Left | | Thru | | Right | | Left | | 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 | 19 | 19 | 15 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:30:00 | 40 | 21 | 31 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:45:00 | 80 | 40 | 44 | 13 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 1 | 1 | 0 | 0 |
| 8:00:00 | 121 | 41 | 62 | 18 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 8:15:00 | 174 | 53 | 84 | 22 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 2 | 2 | 2 | 1 | 0 | 0 | 0 |
| 8:30:00 | 207 | 33 | 105 | 21 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 5 | 1 | 2 | 0 | 1 | 0 | 0 | 0 |
| 8:45:00 | 254 | 47 | 125 | 20 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 5 | 0 | 4 | 2 | 1 | 0 | 0 | 0 |
| 9:00:00 | 280 | 26 | 138 | 13 | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 5 | 0 | 4 | 0 | 1 | 0 | 0 | 0 |
| 9:15:00 | 280 | 0 | 138 | 0 | 2 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 5 | 0 | 4 | 0 | 1 | 0 | 0 | 0 |
| 16:00:00 | 280 | 0 | 138 | 0 | 2 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 5 | 0 | 4 | 0 | 1 | 0 | 0 | 0 |
| 16:15:00 | 305 | 25 | 158 | 20 | 5 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 7 | 2 | 4 | 0 | 1 | 0 | 0 | 0 |
| 16:30:00 | 327 | 22 | 189 | 31 | 5 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 7 | 0 | 4 | 0 | 1 | 0 | 0 | 0 |
| 16:45:00 | 399 | 72 | 227 | 38 | 7 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 9 | 2 | 5 | 1 | 1 | 0 | 0 | 0 |
| 17:00:00 | 446 | 47 | 257 | 30 | 11 | 4 | 1 | 0 | 1 | 0 | 0 | 0 | 9 | 0 | 5 | 0 | 1 | 0 | 0 | 0 |
| 17:15:00 | 484 | 38 | 292 | 35 | 13 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 9 | 0 | 5 | 0 | 1 | 0 | 0 | 0 |
| 17:30:00 | 513 | 29 | 323 | 31 | 15 | 2 | 1 | 0 | 2 | 1 | 0 | 0 | 9 | 0 | 5 | 0 | 1 | 0 | 0 | 0 |
| 17:45:00 | 533 | 20 | 342 | 19 | 15 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 9 | 0 | 5 | 0 | 1 | 0 | 0 | 0 |
| 18:00:00 | 565 | 32 | 366 | 24 | 15 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 9 | 0 | 5 | 0 | 1 | 0 | 0 | 0 |
| 18:15:00 | 597 | 32 | 385 | 19 | 16 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 9 | 0 | 5 | 0 | 1 | 0 | 0 | 0 |
| 18:30:00 | 612 | 15 | 396 | 11 | 16 | 0 | 1 | 0 | 3 | 1 | 0 | 0 | 10 | 1 | 5 | 0 | 1 | 0 | 0 | 0 |
| 18:45:00 | 622 | 10 | 406 | 10 | 16 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 10 | 0 | 5 | 0 | 1 | 0 | 0 | 0 |
| 19:00:00 | 627 | 5 | 413 | 7 | 16 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 10 | 0 | 5 | 0 | 1 | 0 | 0 | 0 |
| 19:15:00 | 627 | 0 | 413 | 0 | 16 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 10 | 0 | 5 | 0 | 1 | 0 | 0 | 0 |
| 19:15:15 | 627 | 0 | 413 | 0 | 16 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 10 | 0 | 5 | 0 | 1 | 0 | 0 | 0 |

Accu-Traffic Inc.
Traffic Monitoring & Data Analysis

**Count Date: 1-Mar-23** **Site #: 2305000002**

| 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 | 2 | 2 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:30:00 | 5 | 3 | 1 | 0 | 3 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:45:00 | 8 | 3 | 1 | 0 | 5 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:00:00 | 13 | 5 | 2 | 1 | 5 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:15:00 | 18 | 5 | 2 | 0 | 6 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 0 | 0 | 1 | 1 | 0 | 0 |
| 8:30:00 | 22 | 4 | 2 | 0 | 7 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 8:45:00 | 27 | 5 | 2 | 0 | 8 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 5 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| 9:00:00 | 28 | 1 | 3 | 1 | 11 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 2 | 1 | 0 | 0 |
| 9:15:00 | 28 | 0 | 3 | 0 | 11 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 16:00:00 | 28 | 0 | 3 | 0 | 11 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 16:15:00 | 57 | 29 | 4 | 1 | 15 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 16:30:00 | 78 | 21 | 5 | 1 | 21 | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 16:45:00 | 101 | 23 | 6 | 1 | 25 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 17:00:00 | 127 | 26 | 7 | 1 | 31 | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 17:15:00 | 148 | 21 | 7 | 0 | 37 | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 17:30:00 | 171 | 23 | 7 | 0 | 47 | 10 | 4 | 2 | 0 | 0 | 0 | 0 | 6 | 1 | 0 | 0 | 2 | 0 | 0 | 0 |
| 17:45:00 | 197 | 26 | 8 | 1 | 53 | 6 | 4 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 18:00:00 | 223 | 26 | 9 | 1 | 60 | 7 | 5 | 1 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 18:15:00 | 251 | 28 | 10 | 1 | 60 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 18:30:00 | 263 | 12 | 10 | 0 | 65 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 7 | 1 | 0 | 0 | 2 | 0 | 0 | 0 |
| 18:45:00 | 279 | 16 | 10 | 0 | 66 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 19:00:00 | 288 | 9 | 10 | 0 | 68 | 2 | 5 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 19:15:00 | 288 | 0 | 10 | 0 | 68 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 19:15:15 | 288 | 0 | 10 | 0 | 68 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |

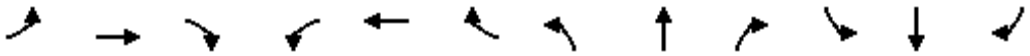
# Appendix D –
# Synchro Analysis Output –
# Existing Traffic Volumes



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 7 | 5 | 23 | 108 | 4 | 4 | 14 | 74 | 28 | 59 | 76 | 6 |
| Future Volume (Veh/h) | 7 | 5 | 23 | 108 | 4 | 4 | 14 | 74 | 28 | 59 | 76 | 6 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 7 | 5 | 24 | 115 | 4 | 4 | 15 | 79 | 30 | 63 | 81 | 6 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (m) | | | | | | | | | | | | |
| Walking Speed (m/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (m) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 340 | 349 | 84 | 358 | 337 | 94 | 87 | | | 109 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 340 | 349 | 84 | 358 | 337 | 94 | 87 | | | 109 | | |
| tC, single (s) | 7.2 | 6.7 | 6.2 | 7.1 | 6.8 | 6.5 | 4.2 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.6 | 4.2 | 3.3 | 3.5 | 4.2 | 3.5 | 2.3 | | | 2.2 | | |
| p0 queue free % | 99 | 99 | 98 | 79 | 99 | 100 | 99 | | | 96 | | |
| cM capacity (veh/h) | 562 | 519 | 970 | 551 | 520 | 903 | 1472 | | | 1494 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | SB 2 |
|---|---|---|---|---|---|
| Volume Total | 36 | 123 | 124 | 63 | 87 |
| Volume Left | 7 | 115 | 15 | 63 | 0 |
| Volume Right | 24 | 4 | 30 | 0 | 6 |
| cSH | 769 | 557 | 1472 | 1494 | 1700 |
| Volume to Capacity | 0.05 | 0.22 | 0.01 | 0.04 | 0.05 |
| Queue Length 95th (m) | 1.2 | 6.7 | 0.2 | 1.1 | 0.0 |
| Control Delay (s) | 9.9 | 13.3 | 1.0 | 7.5 | 0.0 |
| Lane LOS | A | B | A | A | |
| Approach Delay (s) | 9.9 | 13.3 | 1.0 | 3.2 | |
| Approach LOS | A | B | | | |

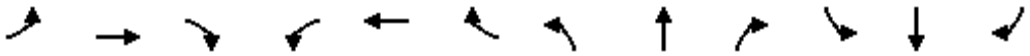
| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 6.0 | | | |
| Intersection Capacity Utilization | 33.9% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 24 | 1 | 4 | 2 | 1 | 6 | 177 | 86 | 1 | 9 | 183 | 14 |
| Future Volume (Veh/h) | 24 | 1 | 4 | 2 | 1 | 6 | 177 | 86 | 1 | 9 | 183 | 14 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 26 | 1 | 4 | 2 | 1 | 7 | 192 | 93 | 1 | 10 | 199 | 15 |
| 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 | 711 | 704 | 206 | 708 | 712 | 94 | 214 | | | 94 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 711 | 704 | 206 | 708 | 712 | 94 | 214 | | | 94 | | |
| tC, single (s) | 7.3 | 6.5 | 6.5 | 7.6 | 6.5 | 6.2 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.7 | 4.0 | 3.5 | 4.0 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 91 | 100 | 99 | 99 | 100 | 99 | 86 | | | 99 | | |
| cM capacity (veh/h) | 285 | 310 | 779 | 259 | 307 | 969 | 1356 | | | 1513 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | SB 1 |
|---|---|---|---|---|---|
| Volume Total | 31 | 10 | 192 | 94 | 224 |
| Volume Left | 26 | 2 | 192 | 0 | 10 |
| Volume Right | 4 | 7 | 0 | 1 | 15 |
| cSH | 311 | 549 | 1356 | 1700 | 1513 |
| Volume to Capacity | 0.10 | 0.02 | 0.14 | 0.06 | 0.01 |
| Queue Length 95th (m) | 2.6 | 0.4 | 3.9 | 0.0 | 0.2 |
| Control Delay (s) | 17.8 | 11.7 | 8.1 | 0.0 | 0.4 |
| Lane LOS | C | B | A | | A |
| Approach Delay (s) | 17.8 | 11.7 | 5.4 | | 0.4 |
| Approach LOS | C | B | | | |

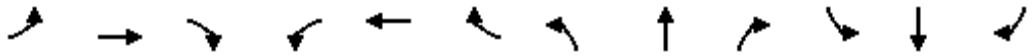
| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 4.2 | | | |
| Intersection Capacity Utilization | 37.8% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 11 | 7 | 25 | 207 | 13 | 2 | 19 | 210 | 12 | 30 | 90 | 5 |
| Future Volume (Veh/h) | 11 | 7 | 25 | 207 | 13 | 2 | 19 | 210 | 12 | 30 | 90 | 5 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 11 | 7 | 26 | 213 | 13 | 2 | 20 | 216 | 12 | 31 | 93 | 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 | 428 | 426 | 96 | 446 | 422 | 222 | 98 | | | 228 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 428 | 426 | 96 | 446 | 422 | 222 | 98 | | | 228 | | |
| tC, single (s) | 7.1 | 6.6 | 6.2 | 7.1 | 6.7 | 6.2 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.1 | 3.3 | 3.5 | 4.1 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 98 | 99 | 97 | 57 | 97 | 100 | 99 | | | 98 | | |
| cM capacity (veh/h) | 514 | 485 | 956 | 492 | 486 | 823 | 1476 | | | 1352 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | SB 2 |
|---|---|---|---|---|---|
| Volume Total | 44 | 228 | 248 | 31 | 98 |
| Volume Left | 11 | 213 | 20 | 31 | 0 |
| Volume Right | 26 | 2 | 12 | 0 | 5 |
| cSH | 698 | 493 | 1476 | 1352 | 1700 |
| Volume to Capacity | 0.06 | 0.46 | 0.01 | 0.02 | 0.06 |
| Queue Length 95th (m) | 1.6 | 19.2 | 0.3 | 0.6 | 0.0 |
| Control Delay (s) | 10.5 | 18.4 | 0.7 | 7.7 | 0.0 |
| Lane LOS | B | C | A | A | |
| Approach Delay (s) | 10.5 | 18.4 | 0.7 | 1.9 | |
| Approach LOS | B | C | | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 7.8 | | | |
| Intersection Capacity Utilization | 47.3% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |

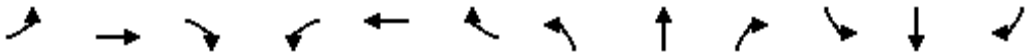


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 96 | 2 | 26 | 6 | 7 | 9 | 188 | 136 | 10 | 11 | 292 | 19 |
| Future Volume (Veh/h) | 96 | 2 | 26 | 6 | 7 | 9 | 188 | 136 | 10 | 11 | 292 | 19 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Hourly flow rate (vph) | 109 | 2 | 30 | 7 | 8 | 10 | 214 | 155 | 11 | 12 | 332 | 22 |
| 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 | 964 | 961 | 343 | 986 | 966 | 160 | 354 | | | 166 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 964 | 961 | 343 | 986 | 966 | 160 | 354 | | | 166 | | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 43 | 99 | 96 | 96 | 96 | 99 | 82 | | | 99 | | |
| cM capacity (veh/h) | 193 | 211 | 704 | 187 | 209 | 890 | 1210 | | | 1424 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | SB 1 |
|---|---|---|---|---|---|
| Volume Total | 141 | 25 | 214 | 166 | 366 |
| Volume Left | 109 | 7 | 214 | 0 | 12 |
| Volume Right | 30 | 10 | 0 | 11 | 22 |
| cSH | 228 | 287 | 1210 | 1700 | 1424 |
| Volume to Capacity | 0.62 | 0.09 | 0.18 | 0.10 | 0.01 |
| Queue Length 95th (m) | 29.0 | 2.3 | 5.1 | 0.0 | 0.2 |
| Control Delay (s) | 43.2 | 18.7 | 8.6 | 0.0 | 0.3 |
| Lane LOS | E | C | A | | A |
| Approach Delay (s) | 43.2 | 18.7 | 4.9 | | 0.3 |
| Approach LOS | E | C | | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 9.3 | | | |
| Intersection Capacity Utilization | 54.2% | ICU Level of Service | | A |
| Analysis Period (min) | 15 | | | |

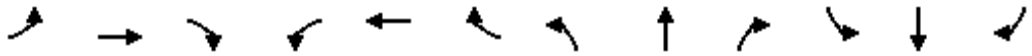
# Appendix E –
# Synchro Analysis Output –
# Background Traffic Volumes



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 8 | 6 | 25 | 335 | 4 | 4 | 15 | 100 | 45 | 66 | 96 | 7 |
| Future Volume (Veh/h) | 8 | 6 | 25 | 335 | 4 | 4 | 15 | 100 | 45 | 66 | 96 | 7 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 9 | 6 | 27 | 356 | 4 | 4 | 16 | 106 | 48 | 70 | 102 | 7 |
| 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 | 414 | 432 | 106 | 434 | 411 | 130 | 109 | | | 154 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 414 | 432 | 106 | 434 | 411 | 130 | 109 | | | 154 | | |
| tC, single (s) | 7.2 | 6.7 | 6.2 | 7.1 | 6.8 | 6.5 | 4.2 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.6 | 4.2 | 3.3 | 3.5 | 4.2 | 3.5 | 2.3 | | | 2.2 | | |
| p0 queue free % | 98 | 99 | 97 | 26 | 99 | 100 | 99 | | | 95 | | |
| cM capacity (veh/h) | 499 | 461 | 943 | 484 | 468 | 862 | 1445 | | | 1439 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | SB 2 |
|---|---|---|---|---|---|
| Volume Total | 42 | 364 | 170 | 70 | 109 |
| Volume Left | 9 | 356 | 16 | 70 | 0 |
| Volume Right | 27 | 4 | 48 | 0 | 7 |
| cSH | 704 | 486 | 1445 | 1439 | 1700 |
| Volume to Capacity | 0.06 | 0.75 | 0.01 | 0.05 | 0.06 |
| Queue Length 95th (m) | 1.5 | 50.6 | 0.3 | 1.2 | 0.0 |
| Control Delay (s) | 10.4 | 31.3 | 0.8 | 7.6 | 0.0 |
| Lane LOS | B | D | A | A | |
| Approach Delay (s) | 10.4 | 31.3 | 0.8 | 3.0 | |
| Approach LOS | B | D | | | |

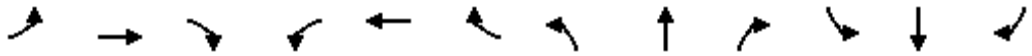
| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 16.6 | | | |
| Intersection Capacity Utilization | 52.8% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 27 | 1 | 11 | 2 | 1 | 7 | 586 | 127 | 1 | 10 | 428 | 16 |
| Future Volume (Veh/h) | 27 | 1 | 11 | 2 | 1 | 7 | 586 | 127 | 1 | 10 | 428 | 16 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 29 | 1 | 12 | 2 | 1 | 8 | 637 | 138 | 1 | 11 | 465 | 17 |
| 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 | 1916 | 1908 | 474 | 1920 | 1916 | 138 | 482 | | | 139 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1916 | 1908 | 474 | 1920 | 1916 | 138 | 482 | | | 139 | | |
| tC, single (s) | 7.3 | 6.5 | 6.5 | 7.6 | 6.5 | 6.2 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.7 | 4.0 | 3.5 | 4.0 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 0 | 96 | 98 | 90 | 96 | 99 | 41 | | | 99 | | |
| cM capacity (veh/h) | 23 | 28 | 546 | 19 | 28 | 915 | 1081 | | | 1457 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | SB 1 |
|---|---|---|---|---|---|
| Volume Total | 42 | 11 | 637 | 139 | 493 |
| Volume Left | 29 | 2 | 637 | 0 | 11 |
| Volume Right | 12 | 8 | 0 | 1 | 17 |
| cSH | 32 | 74 | 1081 | 1700 | 1457 |
| Volume to Capacity | 1.30 | 0.15 | 0.59 | 0.08 | 0.01 |
| Queue Length 95th (m) | 37.0 | 4.0 | 32.1 | 0.0 | 0.2 |
| Control Delay (s) | 449.9 | 62.2 | 13.0 | 0.0 | 0.2 |
| Lane LOS | F | F | B | | A |
| Approach Delay (s) | 449.9 | 62.2 | 10.7 | | 0.2 |
| Approach LOS | F | F | | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 21.2 | | | |
| Intersection Capacity Utilization | 78.0% | 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) | 12 | 8 | 28 | 638 | 15 | 2 | 21 | 246 | 23 | 34 | 118 | 6 |
| Future Volume (Veh/h) | 12 | 8 | 28 | 638 | 15 | 2 | 21 | 246 | 23 | 34 | 118 | 6 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 12 | 8 | 29 | 658 | 15 | 2 | 22 | 254 | 24 | 35 | 122 | 6 |
| 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 | 514 | 517 | 125 | 535 | 508 | 266 | 128 | | | 278 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 514 | 517 | 125 | 535 | 508 | 266 | 128 | | | 278 | | |
| tC, single (s) | 7.1 | 6.6 | 6.2 | 7.1 | 6.7 | 6.2 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.1 | 3.3 | 3.5 | 4.1 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 97 | 98 | 97 | 0 | 97 | 100 | 98 | | | 97 | | |
| cM capacity (veh/h) | 445 | 427 | 920 | 424 | 431 | 778 | 1440 | | | 1296 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | SB 2 |
|---|---|---|---|---|---|
| Volume Total | 49 | 675 | 300 | 35 | 128 |
| Volume Left | 12 | 658 | 22 | 35 | 0 |
| Volume Right | 29 | 2 | 24 | 0 | 6 |
| cSH | 635 | 425 | 1440 | 1296 | 1700 |
| Volume to Capacity | 0.08 | 1.59 | 0.02 | 0.03 | 0.08 |
| Queue Length 95th (m) | 2.0 | 303.3 | 0.4 | 0.7 | 0.0 |
| Control Delay (s) | 11.1 | 299.1 | 0.7 | 7.9 | 0.0 |
| Lane LOS | B | F | A | A | |
| Approach Delay (s) | 11.1 | 299.1 | 0.7 | 1.7 | |
| Approach LOS | B | F | | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 170.9 | | | |
| Intersection Capacity Utilization | 80.0% | 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) | 107 | 2 | 44 | 7 | 8 | 10 | 505 | 174 | 11 | 12 | 747 | 21 |
| Future Volume (Veh/h) | 107 | 2 | 44 | 7 | 8 | 10 | 505 | 174 | 11 | 12 | 747 | 21 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Hourly flow rate (vph) | 122 | 2 | 50 | 8 | 9 | 11 | 574 | 198 | 12 | 14 | 849 | 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 | 2250 | 2247 | 861 | 2292 | 2253 | 204 | 873 | | | 210 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 2250 | 2247 | 861 | 2292 | 2253 | 204 | 873 | | | 210 | | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 0 | 82 | 86 | 4 | 17 | 99 | 26 | | | 99 | | |
| cM capacity (veh/h) | 4 | 11 | 358 | 8 | 11 | 842 | 777 | | | 1373 | | |

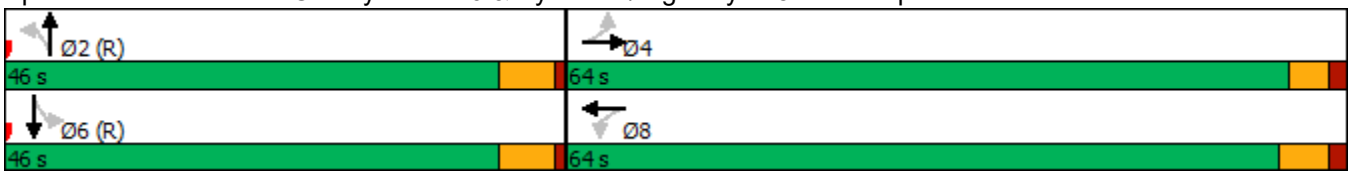
| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | SB 1 |
|---|---|---|---|---|---|
| Volume Total | 174 | 28 | 574 | 210 | 887 |
| Volume Left | 122 | 8 | 574 | 0 | 14 |
| Volume Right | 50 | 11 | 0 | 12 | 24 |
| cSH | 6 | 16 | 777 | 1700 | 1373 |
| Volume to Capacity | 30.34 | 1.80 | 0.74 | 0.12 | 0.01 |
| Queue Length 95th (m) | Err | 32.9 | 53.7 | 0.0 | 0.2 |
| Control Delay (s) | Err | 884.8 | 21.5 | 0.0 | 0.3 |
| Lane LOS | F | F | C | | A |
| Approach Delay (s) | Err | 884.8 | 15.8 | | 0.3 |
| Approach LOS | F | F | | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 948.9 | | | |
| Intersection Capacity Utilization | 101.3% | ICU Level of Service | G | |
| Analysis Period (min) | 15 | | | |

| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Traffic Volume (vph) | 8 | 6 | 335 | 4 | 15 | 100 | 66 | 96 |
| Future Volume (vph) | 8 | 6 | 335 | 4 | 15 | 100 | 66 | 96 |
| Lane Group Flow (vph) | 0 | 42 | 0 | 364 | 0 | 170 | 70 | 109 |
| 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 | | 0.59 | | 0.30 | 0.18 | 0.17 |
| Control Delay | | 6.5 | | 22.7 | | 23.4 | 25.1 | 23.6 |
| Queue Delay | | 0.0 | | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Delay | | 6.5 | | 22.7 | | 23.4 | 25.1 | 23.6 |
| Queue Length 50th (m) | | 1.5 | | 53.8 | | 23.6 | 10.6 | 15.8 |
| Queue Length 95th (m) | | 6.9 | | 86.2 | | 41.4 | 21.6 | 28.8 |
| Internal Link Dist (m) | | 592.7 | | 625.0 | | 491.5 | | 559.6 |
| Turn Bay Length (m) | | | | | | | 82.0 | |
| Base Capacity (vph) | | 748 | | 614 | | 571 | 399 | 632 |
| 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 | | 0.59 | | 0.30 | 0.18 | 0.17 |

| 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



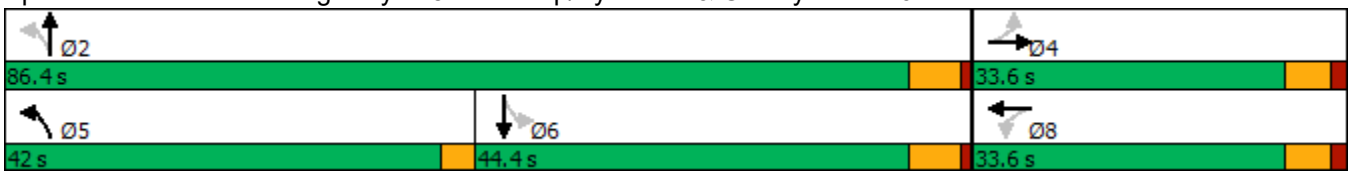
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 8 | 6 | 25 | 335 | 4 | 4 | 15 | 100 | 45 | 66 | 96 | 7 |
| Future Volume (vph) | 8 | 6 | 25 | 335 | 4 | 4 | 15 | 100 | 45 | 66 | 96 | 7 |
| 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 | | 0.91 | | | 1.00 | | | 0.96 | | 1.00 | 0.99 | |
| Flt Protected | | 0.99 | | | 0.95 | | | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1458 | | | 1580 | | | 1557 | | 1662 | 1717 | |
| Flt Permitted | | 0.93 | | | 0.70 | | | 0.97 | | 0.62 | 1.00 | |
| Satd. Flow (perm) | | 1369 | | | 1160 | | | 1521 | | 1087 | 1717 | |
| Peak-hour factor, PHF | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Adj. Flow (vph) | 9 | 6 | 27 | 356 | 4 | 4 | 16 | 106 | 48 | 70 | 102 | 7 |
| RTOR Reduction (vph) | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 3 | 0 |
| Lane Group Flow (vph) | 0 | 30 | 0 | 0 | 364 | 0 | 0 | 157 | 0 | 70 | 106 | 0 |
| Heavy Vehicles (%) | 14% | 20% | 4% | 5% | 25% | 25% | 8% | 11% | 0% | 0% | 1% | 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) | | 735 | | | 613 | | | 558 | | 399 | 630 | |
| v/s Ratio Prot | | | | | | | | | | | 0.06 | |
| v/s Ratio Perm | | 0.02 | | | c0.31 | | | c0.10 | | 0.06 | | |
| v/c Ratio | | 0.04 | | | 0.59 | | | 0.28 | | 0.18 | 0.17 | |
| Uniform Delay, d1 | | 12.0 | | | 17.8 | | | 24.6 | | 23.5 | 23.5 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 0.1 | | | 4.2 | | | 1.3 | | 1.0 | 0.6 | |
| Delay (s) | | 12.1 | | | 22.0 | | | 25.8 | | 24.5 | 24.1 | |
| Level of Service | | B | | | C | | | C | | C | C | |
| Approach Delay (s) | | 12.1 | | | 22.0 | | | 25.8 | | | 24.2 | |
| Approach LOS | | B | | | C | | | C | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 22.8 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.47 | | |
| Actuated Cycle Length (s) | 110.0 | Sum of lost time (s) | 11.4 |
| Intersection Capacity Utilization | 61.6% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Traffic Volume (vph) | 27 | 1 | 2 | 1 | 586 | 127 | 10 | 428 |
| Future Volume (vph) | 27 | 1 | 2 | 1 | 586 | 127 | 10 | 428 |
| Lane Group Flow (vph) | 0 | 42 | 0 | 11 | 637 | 139 | 0 | 493 |
| 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 | 42.0 | 86.4 | 44.4 | 44.4 |
| Total Split (%) | 28.0% | 28.0% | 28.0% | 28.0% | 35.0% | 72.0% | 37.0% | 37.0% |
| 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 | | 0.33 | | 0.07 | 0.74 | 0.10 | | 0.54 |
| Control Delay | | 40.2 | | 27.9 | 9.6 | 2.3 | | 24.0 |
| Queue Delay | | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Total Delay | | 40.2 | | 27.9 | 9.6 | 2.3 | | 24.0 |
| Queue Length 50th (m) | | 5.9 | | 0.6 | 29.8 | 5.2 | | 79.6 |
| Queue Length 95th (m) | | 17.3 | | 6.1 | 73.2 | 10.3 | | 133.6 |
| Internal Link Dist (m) | | 658.6 | | 1175.6 | | 599.4 | | 491.5 |
| Turn Bay Length (m) | | | | | 85.0 | | | |
| Base Capacity (vph) | | 324 | | 395 | 980 | 1437 | | 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 | | 0.13 | | 0.03 | 0.65 | 0.10 | | 0.54 |

| Intersection Summary |
|---|
| Cycle Length: 120 |
| Actuated Cycle Length: 96.3 |
| Natural Cycle: 100 |
| 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) | 27 | 1 | 11 | 2 | 1 | 7 | 586 | 127 | 1 | 10 | 428 | 16 |
| Future Volume (vph) | 27 | 1 | 11 | 2 | 1 | 7 | 586 | 127 | 1 | 10 | 428 | 16 |
| 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 | | | 0.90 | | 1.00 | 1.00 | | | 1.00 | |
| Flt Protected | | 0.97 | | | 0.99 | | 0.95 | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | 1337 | | | 1434 | | 1630 | 1650 | | | 1720 | |
| Flt Permitted | | 0.79 | | | 0.93 | | 0.40 | 1.00 | | | 0.99 | |
| Satd. Flow (perm) | | 1089 | | | 1340 | | 681 | 1650 | | | 1711 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 29 | 1 | 12 | 2 | 1 | 8 | 637 | 138 | 1 | 11 | 465 | 17 |
| RTOR Reduction (vph) | 0 | 11 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Lane Group Flow (vph) | 0 | 31 | 0 | 0 | 3 | 0 | 637 | 139 | 0 | 0 | 492 | 0 |
| Heavy Vehicles (%) | 21% | 0% | 25% | 50% | 0% | 0% | 2% | 6% | 0% | 0% | 1% | 7% |
| 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) | | 6.0 | | | 6.0 | | 81.4 | 81.4 | | | 50.9 | |
| Effective Green, g (s) | | 6.0 | | | 6.0 | | 81.4 | 81.4 | | | 50.9 | |
| Actuated g/C Ratio | | 0.06 | | | 0.06 | | 0.82 | 0.82 | | | 0.52 | |
| 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) | | 66 | | | 81 | | 825 | 1359 | | | 881 | |
| v/s Ratio Prot | | | | | | | c0.21 | 0.08 | | | | |
| v/s Ratio Perm | | c0.03 | | | 0.00 | | c0.42 | | | | 0.29 | |
| v/c Ratio | | 0.47 | | | 0.04 | | 0.77 | 0.10 | | | 0.56 | |
| Uniform Delay, d1 | | 44.9 | | | 43.7 | | 5.8 | 1.7 | | | 16.3 | |
| Progression Factor | | 1.00 | | | 1.00 | | 1.00 | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 5.1 | | | 0.2 | | 4.5 | 0.2 | | | 2.6 | |
| Delay (s) | | 50.0 | | | 43.9 | | 10.3 | 1.8 | | | 18.9 | |
| Level of Service | | D | | | D | | B | A | | | B | |
| Approach Delay (s) | | 50.0 | | | 43.9 | | | 8.8 | | | 18.9 | |
| Approach LOS | | D | | | D | | | A | | | B | |

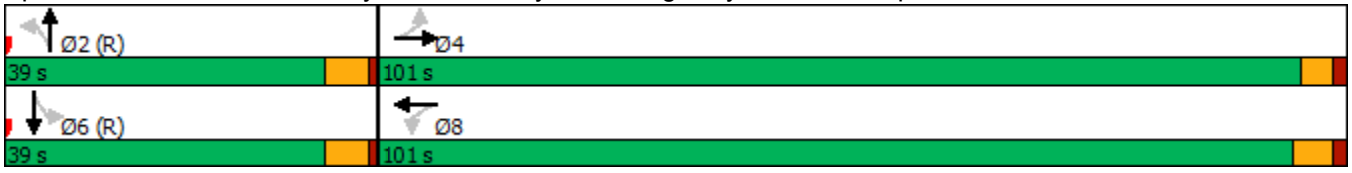
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 14.1 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.77 | | |
| Actuated Cycle Length (s) | 98.8 | Sum of lost time (s) | 14.4 |
| Intersection Capacity Utilization | 83.9% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Traffic Volume (vph) | 12 | 8 | 638 | 15 | 21 | 246 | 34 | 118 |
| Future Volume (vph) | 12 | 8 | 638 | 15 | 21 | 246 | 34 | 118 |
| Lane Group Flow (vph) | 0 | 49 | 0 | 675 | 0 | 300 | 35 | 128 |
| 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) | 101.0 | 101.0 | 101.0 | 101.0 | 39.0 | 39.0 | 39.0 | 39.0 |
| Total Split (%) | 72.1% | 72.1% | 72.1% | 72.1% | 27.9% | 27.9% | 27.9% | 27.9% |
| 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 | | 0.05 | | 0.82 | | 0.76 | 0.25 | 0.32 |
| Control Delay | | 3.8 | | 26.5 | | 62.7 | 48.8 | 45.8 |
| Queue Delay | | 0.0 | | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Delay | | 3.8 | | 26.5 | | 62.7 | 48.8 | 45.8 |
| Queue Length 50th (m) | | 1.7 | | 131.5 | | 81.2 | 8.3 | 30.5 |
| Queue Length 95th (m) | | 5.9 | | 205.5 | | #119.2 | 19.5 | 50.2 |
| Internal Link Dist (m) | | 592.7 | | 625.0 | | 491.5 | | 559.6 |
| Turn Bay Length (m) | | | | | | | 82.0 | |
| Base Capacity (vph) | | 919 | | 824 | | 395 | 141 | 404 |
| 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 | | 0.05 | | 0.82 | | 0.76 | 0.25 | 0.32 |

## Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
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) | 12 | 8 | 28 | 638 | 15 | 2 | 21 | 246 | 23 | 34 | 118 | 6 |
| Future Volume (vph) | 12 | 8 | 28 | 638 | 15 | 2 | 21 | 246 | 23 | 34 | 118 | 6 |
| 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 | | 0.92 | | | 1.00 | | | 0.99 | | 1.00 | 0.99 | |
| Flt Protected | | 0.99 | | | 0.95 | | | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1520 | | | 1662 | | | 1690 | | 1662 | 1689 | |
| Flt Permitted | | 0.86 | | | 0.70 | | | 0.97 | | 0.34 | 1.00 | |
| Satd. Flow (perm) | | 1326 | | | 1213 | | | 1647 | | 592 | 1689 | |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 12 | 8 | 29 | 658 | 15 | 2 | 22 | 254 | 24 | 35 | 122 | 6 |
| RTOR Reduction (vph) | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 |
| Lane Group Flow (vph) | 0 | 40 | 0 | 0 | 675 | 0 | 0 | 298 | 0 | 35 | 126 | 0 |
| Heavy Vehicles (%) | 0% | 14% | 4% | 0% | 15% | 0% | 5% | 2% | 0% | 0% | 3% | 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) | | 96.1 | | | 95.2 | | | 33.4 | | 33.4 | 33.4 | |
| Effective Green, g (s) | | 96.1 | | | 95.2 | | | 33.4 | | 33.4 | 33.4 | |
| Actuated g/C Ratio | | 0.69 | | | 0.68 | | | 0.24 | | 0.24 | 0.24 | |
| 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) | | 910 | | | 824 | | | 392 | | 141 | 402 | |
| v/s Ratio Prot | | | | | | | | | | | 0.07 | |
| v/s Ratio Perm | | 0.03 | | | c0.56 | | | c0.18 | | 0.06 | | |
| v/c Ratio | | 0.04 | | | 0.82 | | | 0.76 | | 0.25 | 0.31 | |
| Uniform Delay, d1 | | 7.1 | | | 16.2 | | | 49.6 | | 43.1 | 43.9 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 0.1 | | | 8.9 | | | 12.9 | | 4.2 | 2.0 | |
| Delay (s) | | 7.2 | | | 25.1 | | | 62.5 | | 47.3 | 45.9 | |
| Level of Service | | A | | | C | | | E | | D | D | |
| Approach Delay (s) | | 7.2 | | | 25.1 | | | 62.5 | | | 46.2 | |
| Approach LOS | | A | | | C | | | E | | | D | |

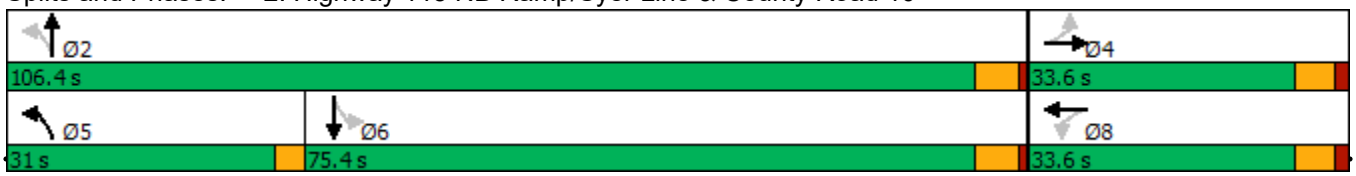
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 36.7 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.80 | | |
| Actuated Cycle Length (s) | 140.0 | Sum of lost time (s) | 11.4 |
| Intersection Capacity Utilization | 90.1% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Traffic Volume (vph) | 107 | 2 | 7 | 8 | 505 | 174 | 12 | 747 |
| Future Volume (vph) | 107 | 2 | 7 | 8 | 505 | 174 | 12 | 747 |
| Lane Group Flow (vph) | 0 | 174 | 0 | 28 | 574 | 211 | 0 | 887 |
| 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 | 31.0 | 106.4 | 75.4 | 75.4 |
| Total Split (%) | 24.0% | 24.0% | 24.0% | 24.0% | 22.1% | 76.0% | 53.9% | 53.9% |
| 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 | | 0.81 | | 0.11 | 1.01 | 0.16 | | 0.99 |
| Control Delay | | 78.0 | | 33.4 | 60.8 | 5.3 | | 59.9 |
| Queue Delay | | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Total Delay | | 78.0 | | 33.4 | 60.8 | 5.3 | | 59.9 |
| Queue Length 50th (m) | | 43.8 | | 4.1 | ~98.4 | 14.3 | | 239.3 |
| Queue Length 95th (m) | | 69.4 | | 12.7 | #182.3 | 25.4 | | #346.7 |
| Internal Link Dist (m) | | 658.6 | | 1175.6 | | 599.4 | | 491.5 |
| Turn Bay Length (m) | | | | | 85.0 | | | |
| Base Capacity (vph) | | 275 | | 326 | 569 | 1299 | | 897 |
| 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 | | 0.09 | 1.01 | 0.16 | | 0.99 |

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 133.7
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) | 107 | 2 | 44 | 7 | 8 | 10 | 505 | 174 | 11 | 12 | 747 | 21 |
| Future Volume (vph) | 107 | 2 | 44 | 7 | 8 | 10 | 505 | 174 | 11 | 12 | 747 | 21 |
| 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 | | | 1.00 | |
| Flt Protected | | 0.97 | | | 0.99 | | 0.95 | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | 1592 | | | 1634 | | 1646 | 1718 | | | 1723 | |
| Flt Permitted | | 0.77 | | | 0.92 | | 0.23 | 1.00 | | | 0.99 | |
| Satd. Flow (perm) | | 1275 | | | 1525 | | 397 | 1718 | | | 1715 | |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Adj. Flow (vph) | 122 | 2 | 50 | 8 | 9 | 11 | 574 | 198 | 12 | 14 | 849 | 24 |
| RTOR Reduction (vph) | 0 | 11 | 0 | 0 | 9 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 163 | 0 | 0 | 19 | 0 | 574 | 210 | 0 | 0 | 887 | 0 |
| Heavy Vehicles (%) | 3% | 0% | 0% | 0% | 0% | 0% | 1% | 1% | 0% | 0% | 1% | 5% |
| 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) | | 21.3 | | | 21.3 | | 101.0 | 101.0 | | | 70.0 | |
| Effective Green, g (s) | | 21.3 | | | 21.3 | | 101.0 | 101.0 | | | 70.0 | |
| Actuated g/C Ratio | | 0.16 | | | 0.16 | | 0.76 | 0.76 | | | 0.52 | |
| 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) | | 203 | | | 242 | | 561 | 1297 | | | 897 | |
| v/s Ratio Prot | | | | | | | c0.21 | 0.12 | | | | |
| v/s Ratio Perm | | c0.13 | | | 0.01 | | c0.56 | | | | 0.52 | |
| v/c Ratio | | 0.80 | | | 0.08 | | 1.02 | 0.16 | | | 0.99 | |
| Uniform Delay, d1 | | 54.2 | | | 47.8 | | 26.4 | 4.6 | | | 31.4 | |
| Progression Factor | | 1.00 | | | 1.00 | | 1.00 | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 20.1 | | | 0.1 | | 44.0 | 0.3 | | | 27.4 | |
| Delay (s) | | 74.3 | | | 48.0 | | 70.4 | 4.8 | | | 58.8 | |
| Level of Service | | E | | | D | | E | A | | | E | |
| Approach Delay (s) | | 74.3 | | | 48.0 | | | 52.8 | | | 58.8 | |
| Approach LOS | | E | | | D | | | D | | | E | |

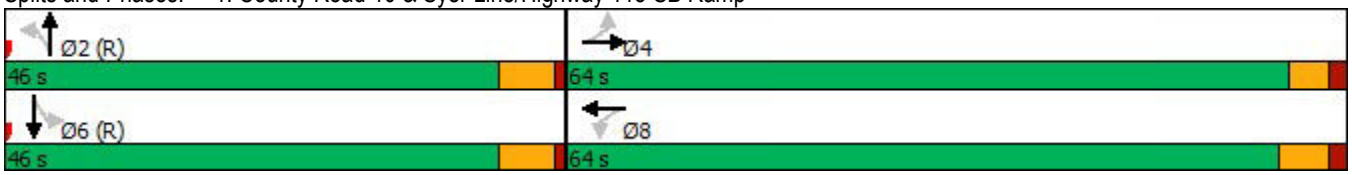
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 57.6 | HCM 2000 Level of Service | E |
| HCM 2000 Volume to Capacity ratio | 1.01 | | |
| Actuated Cycle Length (s) | 133.7 | Sum of lost time (s) | 14.4 |
| Intersection Capacity Utilization | 105.5% | ICU Level of Service | G |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Traffic Volume (vph) | 9 | 6 | 359 | 5 | 17 | 112 | 74 | 106 |
| Future Volume (vph) | 9 | 6 | 359 | 5 | 17 | 112 | 74 | 106 |
| Lane Group Flow (vph) | 0 | 46 | 0 | 398 | 0 | 191 | 79 | 120 |
| 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 | | 0.65 | | 0.34 | 0.21 | 0.19 |
| Control Delay | | 6.3 | | 24.7 | | 24.4 | 25.7 | 24.1 |
| Queue Delay | | 0.0 | | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Delay | | 6.3 | | 24.7 | | 24.4 | 25.7 | 24.1 |
| Queue Length 50th (m) | | 1.6 | | 61.5 | | 27.3 | 12.1 | 17.8 |
| Queue Length 95th (m) | | 7.3 | | 98.3 | | 46.7 | 24.2 | 31.6 |
| Internal Link Dist (m) | | 592.7 | | 625.0 | | 491.5 | | 559.6 |
| Turn Bay Length (m) | | | | | | | 82.0 | |
| Base Capacity (vph) | | 743 | | 612 | | 570 | 383 | 632 |
| 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 | | 0.65 | | 0.34 | 0.21 | 0.19 |

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) | 9 | 6 | 28 | 359 | 5 | 10 | 17 | 112 | 51 | 74 | 106 | 7 |
| Future Volume (vph) | 9 | 6 | 28 | 359 | 5 | 10 | 17 | 112 | 51 | 74 | 106 | 7 |
| 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 | | 0.91 | | | 1.00 | | | 0.96 | | 1.00 | 0.99 | |
| Flt Protected | | 0.99 | | | 0.95 | | | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1458 | | | 1572 | | | 1557 | | 1662 | 1719 | |
| Flt Permitted | | 0.92 | | | 0.70 | | | 0.97 | | 0.60 | 1.00 | |
| Satd. Flow (perm) | | 1357 | | | 1155 | | | 1518 | | 1043 | 1719 | |
| Peak-hour factor, PHF | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Adj. Flow (vph) | 10 | 6 | 30 | 382 | 5 | 11 | 18 | 119 | 54 | 79 | 113 | 7 |
| RTOR Reduction (vph) | 0 | 14 | 0 | 0 | 1 | 0 | 0 | 13 | 0 | 0 | 2 | 0 |
| Lane Group Flow (vph) | 0 | 32 | 0 | 0 | 397 | 0 | 0 | 178 | 0 | 79 | 118 | 0 |
| Heavy Vehicles (%) | 14% | 20% | 4% | 5% | 25% | 25% | 8% | 11% | 0% | 0% | 1% | 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) | | 729 | | | 611 | | | 557 | | 383 | 631 | |
| v/s Ratio Prot | | | | | | | | | | | 0.07 | |
| v/s Ratio Perm | | 0.02 | | | c0.34 | | | c0.12 | | 0.08 | | |
| v/c Ratio | | 0.04 | | | 0.65 | | | 0.32 | | 0.21 | 0.19 | |
| Uniform Delay, d1 | | 12.1 | | | 18.6 | | | 25.0 | | 23.8 | 23.6 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 0.1 | | | 5.3 | | | 1.5 | | 1.2 | 0.7 | |
| Delay (s) | | 12.2 | | | 23.9 | | | 26.5 | | 25.0 | 24.3 | |
| Level of Service | | B | | | C | | | C | | C | C | |
| Approach Delay (s) | | 12.2 | | | 23.9 | | | 26.5 | | | 24.6 | |
| Approach LOS | | B | | | C | | | C | | | C | |

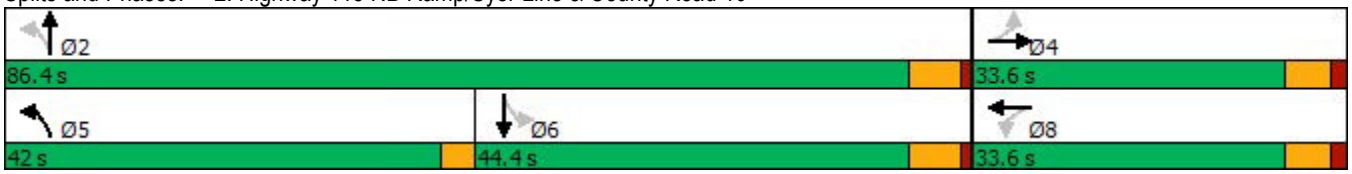
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 24.0 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.51 | | |
| Actuated Cycle Length (s) | 110.0 | Sum of lost time (s) | 11.4 |
| Intersection Capacity Utilization | 66.3% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

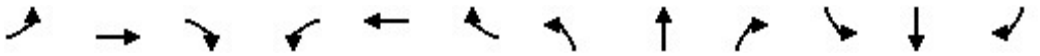
| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Traffic Volume (vph) | 31 | 1 | 2 | 1 | 644 | 142 | 11 | 459 |
| Future Volume (vph) | 31 | 1 | 2 | 1 | 644 | 142 | 11 | 459 |
| Lane Group Flow (vph) | 0 | 49 | 0 | 11 | 700 | 155 | 0 | 532 |
| 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 | 42.0 | 86.4 | 44.4 | 44.4 |
| Total Split (%) | 28.0% | 28.0% | 28.0% | 28.0% | 35.0% | 72.0% | 37.0% | 37.0% |
| 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 | | 0.38 | | 0.07 | 0.81 | 0.11 | | 0.80 |
| Control Delay | | 42.1 | | 27.3 | 20.0 | 2.8 | | 38.5 |
| Queue Delay | | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Total Delay | | 42.1 | | 27.3 | 20.0 | 2.8 | | 38.5 |
| Queue Length 50th (m) | | 7.0 | | 0.6 | 69.9 | 5.8 | | 98.1 |
| Queue Length 95th (m) | | 18.9 | | 6.1 | #154.7 | 12.0 | | #164.0 |
| Internal Link Dist (m) | | 658.6 | | 1175.6 | | 599.4 | | 491.5 |
| Turn Bay Length (m) | | | | | 85.0 | | | |
| Base Capacity (vph) | | 314 | | 385 | 864 | 1365 | | 669 |
| 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 | | 0.03 | 0.81 | 0.11 | | 0.80 |

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 99.7
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) | 31 | 1 | 13 | 2 | 1 | 7 | 644 | 142 | 1 | 11 | 459 | 19 |
| Future Volume (vph) | 31 | 1 | 13 | 2 | 1 | 7 | 644 | 142 | 1 | 11 | 459 | 19 |
| 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 | | | 0.90 | | 1.00 | 1.00 | | | 0.99 | |
| Flt Protected | | 0.97 | | | 0.99 | | 0.95 | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | 1336 | | | 1434 | | 1630 | 1650 | | | 1718 | |
| Flt Permitted | | 0.79 | | | 0.94 | | 0.29 | 1.00 | | | 0.99 | |
| Satd. Flow (perm) | | 1087 | | | 1357 | | 500 | 1650 | | | 1708 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 34 | 1 | 14 | 2 | 1 | 8 | 700 | 154 | 1 | 12 | 499 | 21 |
| RTOR Reduction (vph) | 0 | 13 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Lane Group Flow (vph) | 0 | 36 | 0 | 0 | 4 | 0 | 700 | 155 | 0 | 0 | 531 | 0 |
| Heavy Vehicles (%) | 21% | 0% | 25% | 50% | 0% | 0% | 2% | 6% | 0% | 0% | 1% | 7% |
| 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) | | 8.4 | | | 8.4 | | 81.2 | 81.2 | | | 39.0 | |
| Effective Green, g (s) | | 8.4 | | | 8.4 | | 81.2 | 81.2 | | | 39.0 | |
| Actuated g/C Ratio | | 0.08 | | | 0.08 | | 0.80 | 0.80 | | | 0.39 | |
| 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) | | 90 | | | 112 | | 840 | 1326 | | | 659 | |
| v/s Ratio Prot | | | | | | | c0.32 | 0.09 | | | | |
| v/s Ratio Perm | | c0.03 | | | 0.00 | | c0.35 | | | | 0.31 | |
| v/c Ratio | | 0.40 | | | 0.03 | | 0.83 | 0.12 | | | 0.81 | |
| Uniform Delay, d1 | | 43.9 | | | 42.6 | | 13.6 | 2.1 | | | 27.6 | |
| Progression Factor | | 1.00 | | | 1.00 | | 1.00 | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 2.9 | | | 0.1 | | 7.1 | 0.2 | | | 10.1 | |
| Delay (s) | | 46.8 | | | 42.7 | | 20.7 | 2.3 | | | 37.8 | |
| Level of Service | | D | | | D | | C | A | | | D | |
| Approach Delay (s) | | 46.8 | | | 42.7 | | | 17.4 | | | 37.8 | |
| Approach LOS | | D | | | D | | | B | | | D | |

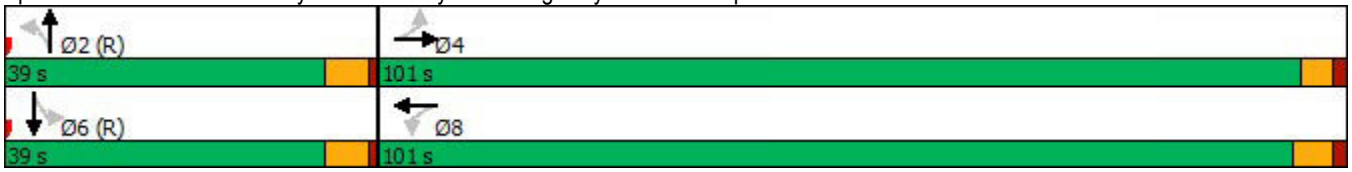
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 26.1 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.82 | | |
| Actuated Cycle Length (s) | 101.0 | Sum of lost time (s) | 14.4 |
| Intersection Capacity Utilization | 89.4% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

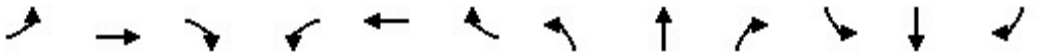
| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Traffic Volume (vph) | 13 | 9 | 698 | 16 | 23 | 271 | 39 | 136 |
| Future Volume (vph) | 13 | 9 | 698 | 16 | 23 | 271 | 39 | 136 |
| Lane Group Flow (vph) | 0 | 53 | 0 | 740 | 0 | 329 | 40 | 146 |
| 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) | 101.0 | 101.0 | 101.0 | 101.0 | 39.0 | 39.0 | 39.0 | 39.0 |
| Total Split (%) | 72.1% | 72.1% | 72.1% | 72.1% | 27.9% | 27.9% | 27.9% | 27.9% |
| 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 | | 0.90 | | 0.84 | 0.32 | 0.36 |
| Control Delay | | 3.8 | | 34.9 | | 69.2 | 52.3 | 47.2 |
| Queue Delay | | 0.0 | | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Delay | | 3.8 | | 34.9 | | 69.2 | 52.3 | 47.2 |
| Queue Length 50th (m) | | 1.9 | | 164.9 | | 91.1 | 9.7 | 35.5 |
| Queue Length 95th (m) | | 6.4 | | #277.7 | | #141.7 | 22.3 | 56.9 |
| Internal Link Dist (m) | | 592.7 | | 625.0 | | 491.5 | | 559.6 |
| Turn Bay Length (m) | | | | | | | 82.0 | |
| Base Capacity (vph) | | 904 | | 821 | | 394 | 126 | 404 |
| 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 | | 0.90 | | 0.84 | 0.32 | 0.36 |

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
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) | 13 | 9 | 30 | 698 | 16 | 4 | 23 | 271 | 25 | 39 | 136 | 6 |
| Future Volume (vph) | 13 | 9 | 30 | 698 | 16 | 4 | 23 | 271 | 25 | 39 | 136 | 6 |
| 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 | | 0.92 | | | 1.00 | | | 0.99 | | 1.00 | 0.99 | |
| Flt Protected | | 0.99 | | | 0.95 | | | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1521 | | | 1662 | | | 1690 | | 1662 | 1691 | |
| Flt Permitted | | 0.85 | | | 0.69 | | | 0.97 | | 0.30 | 1.00 | |
| Satd. Flow (perm) | | 1304 | | | 1208 | | | 1644 | | 533 | 1691 | |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 13 | 9 | 31 | 720 | 16 | 4 | 24 | 279 | 26 | 40 | 140 | 6 |
| RTOR Reduction (vph) | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 0 |
| Lane Group Flow (vph) | 0 | 43 | 0 | 0 | 740 | 0 | 0 | 327 | 0 | 40 | 145 | 0 |
| Heavy Vehicles (%) | 0% | 14% | 4% | 0% | 15% | 0% | 5% | 2% | 0% | 0% | 3% | 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) | | 96.1 | | | 95.2 | | | 33.4 | | 33.4 | 33.4 | |
| Effective Green, g (s) | | 96.1 | | | 95.2 | | | 33.4 | | 33.4 | 33.4 | |
| Actuated g/C Ratio | | 0.69 | | | 0.68 | | | 0.24 | | 0.24 | 0.24 | |
| 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) | | 895 | | | 821 | | | 392 | | 127 | 403 | |
| v/s Ratio Prot | | | | | | | | | | | 0.09 | |
| v/s Ratio Perm | | 0.03 | | | c0.61 | | | c0.20 | | 0.08 | | |
| v/c Ratio | | 0.05 | | | 0.90 | | | 0.83 | | 0.31 | 0.36 | |
| Uniform Delay, d1 | | 7.1 | | | 18.5 | | | 50.7 | | 43.9 | 44.4 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 0.1 | | | 15.0 | | | 18.4 | | 6.4 | 2.5 | |
| Delay (s) | | 7.2 | | | 33.5 | | | 69.1 | | 50.3 | 46.9 | |
| Level of Service | | A | | | C | | | E | | D | D | |
| Approach Delay (s) | | 7.2 | | | 33.5 | | | 69.1 | | | 47.6 | |
| Approach LOS | | A | | | C | | | E | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 43.4 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.88 | | |
| Actuated Cycle Length (s) | 140.0 | Sum of lost time (s) | 11.4 |
| 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) | 120 | 3 | 7 | 9 | 544 | 191 | 13 | 817 |
| Future Volume (vph) | 120 | 3 | 7 | 9 | 544 | 191 | 13 | 817 |
| Lane Group Flow (vph) | 0 | 195 | 0 | 31 | 618 | 231 | 0 | 975 |
| 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 | 31.0 | 106.4 | 75.4 | 75.4 |
| Total Split (%) | 24.0% | 24.0% | 24.0% | 24.0% | 22.1% | 76.0% | 53.9% | 53.9% |
| 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 | | 0.85 | | 0.11 | 1.16 | 0.18 | | 1.10 |
| Control Delay | | 81.4 | | 32.1 | 116.7 | 5.9 | | 95.2 |
| Queue Delay | | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Total Delay | | 81.4 | | 32.1 | 116.7 | 5.9 | | 95.2 |
| Queue Length 50th (m) | | 50.5 | | 4.3 | ~155.0 | 17.8 | | ~322.3 |
| Queue Length 95th (m) | | #83.0 | | 13.5 | #227.3 | 27.9 | | #400.5 |
| Internal Link Dist (m) | | 658.6 | | 1175.6 | | 599.4 | | 491.5 |
| Turn Bay Length (m) | | | | | 85.0 | | | |
| Base Capacity (vph) | | 271 | | 323 | 532 | 1279 | | 883 |
| 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 | | 0.10 | 1.16 | 0.18 | | 1.10 |

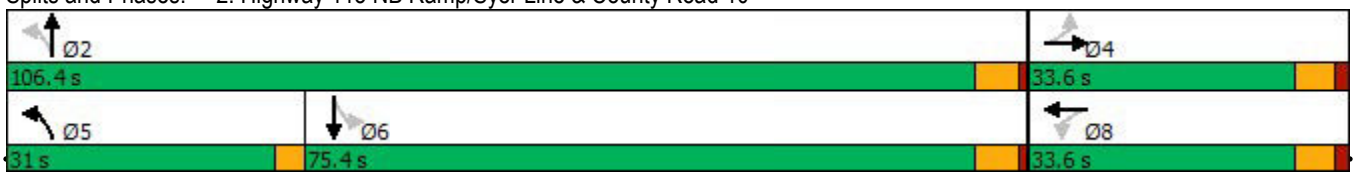
Intersection Summary

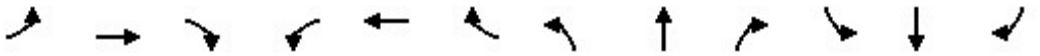
Cycle Length: 140
Actuated Cycle Length: 135.7
Natural Cycle: 150
Control Type: Semi Act-Uncoord

~ 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) | 120 | 3 | 49 | 7 | 9 | 11 | 544 | 191 | 12 | 13 | 817 | 28 |
| Future Volume (vph) | 120 | 3 | 49 | 7 | 9 | 11 | 544 | 191 | 12 | 13 | 817 | 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 | | | 1.00 | |
| Frt | | 0.96 | | | 0.94 | | 1.00 | 0.99 | | | 1.00 | |
| Flt Protected | | 0.97 | | | 0.99 | | 0.95 | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | 1592 | | | 1630 | | 1646 | 1718 | | | 1722 | |
| Flt Permitted | | 0.77 | | | 0.93 | | 0.20 | 1.00 | | | 0.99 | |
| Satd. Flow (perm) | | 1273 | | | 1528 | | 345 | 1718 | | | 1713 | |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Adj. Flow (vph) | 136 | 3 | 56 | 8 | 10 | 12 | 618 | 217 | 14 | 15 | 928 | 32 |
| RTOR Reduction (vph) | 0 | 11 | 0 | 0 | 11 | 0 | 0 | 2 | 0 | 0 | 1 | 0 |
| Lane Group Flow (vph) | 0 | 184 | 0 | 0 | 20 | 0 | 618 | 229 | 0 | 0 | 974 | 0 |
| Heavy Vehicles (%) | 3% | 0% | 0% | 0% | 0% | 0% | 1% | 1% | 0% | 0% | 1% | 5% |
| 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 | | 100.9 | 100.9 | | | 69.9 | |
| Effective Green, g (s) | | 23.3 | | | 23.3 | | 100.9 | 100.9 | | | 69.9 | |
| Actuated g/C Ratio | | 0.17 | | | 0.17 | | 0.74 | 0.74 | | | 0.52 | |
| 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) | | 218 | | | 262 | | 525 | 1278 | | | 883 | |
| v/s Ratio Prot | | | | | | | c0.24 | 0.13 | | | | |
| v/s Ratio Perm | | c0.14 | | | 0.01 | | c0.63 | | | | 0.57 | |
| v/c Ratio | | 0.85 | | | 0.08 | | 1.18 | 0.18 | | | 1.10 | |
| Uniform Delay, d1 | | 54.4 | | | 47.1 | | 29.5 | 5.1 | | | 32.8 | |
| Progression Factor | | 1.00 | | | 1.00 | | 1.00 | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 24.7 | | | 0.1 | | 98.2 | 0.3 | | | 62.6 | |
| Delay (s) | | 79.1 | | | 47.3 | | 127.7 | 5.4 | | | 95.4 | |
| Level of Service | | E | | | D | | F | A | | | F | |
| Approach Delay (s) | | 79.1 | | | 47.3 | | | 94.5 | | | 95.4 | |
| Approach LOS | | E | | | D | | | F | | | F | |

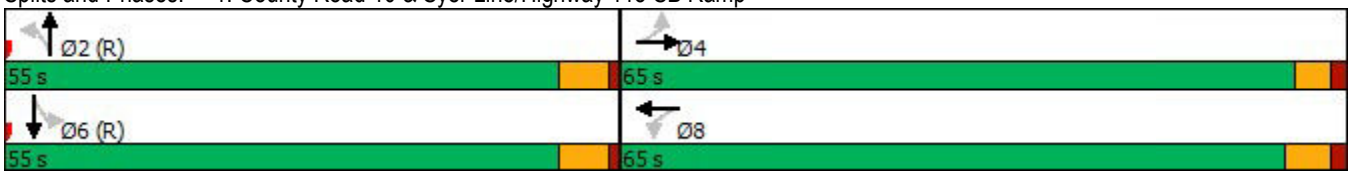
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 92.7 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.14 | | |
| Actuated Cycle Length (s) | 135.6 | Sum of lost time (s) | 14.4 |
| Intersection Capacity Utilization | 113.5% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

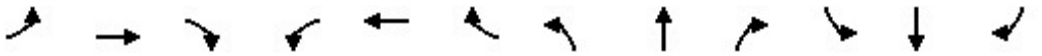
| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Traffic Volume (vph) | 9 | 6 | 359 | 5 | 17 | 112 | 74 | 106 |
| Future Volume (vph) | 9 | 6 | 359 | 5 | 17 | 112 | 74 | 106 |
| Lane Group Flow (vph) | 0 | 46 | 382 | 16 | 0 | 191 | 79 | 120 |
| 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 | | 0.06 | 0.64 | 0.03 | | 0.30 | 0.18 | 0.17 |
| Control Delay | | 7.9 | 28.6 | 9.5 | | 22.6 | 23.9 | 22.6 |
| Queue Delay | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Delay | | 7.9 | 28.6 | 9.5 | | 22.6 | 23.9 | 22.6 |
| Queue Length 50th (m) | | 1.9 | 68.0 | 0.6 | | 27.8 | 12.3 | 18.0 |
| Queue Length 95th (m) | | 8.3 | 104.4 | 4.5 | | 46.3 | 23.8 | 31.4 |
| Internal Link Dist (m) | | 592.7 | | 625.0 | | 491.5 | | 559.6 |
| Turn Bay Length (m) | | | 100.0 | | | | 82.0 | |
| Base Capacity (vph) | | 728 | 597 | 625 | | 637 | 435 | 709 |
| 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 | | 0.06 | 0.64 | 0.03 | | 0.30 | 0.18 | 0.17 |

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) | 9 | 6 | 28 | 359 | 5 | 10 | 17 | 112 | 51 | 74 | 106 | 7 |
| Future Volume (vph) | 9 | 6 | 28 | 359 | 5 | 10 | 17 | 112 | 51 | 74 | 106 | 7 |
| 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 | | 0.91 | | 1.00 | 0.90 | | | 0.96 | | 1.00 | 0.99 | |
| Flt Protected | | 0.99 | | 0.95 | 1.00 | | | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1458 | | 1583 | 1256 | | | 1557 | | 1662 | 1719 | |
| Flt Permitted | | 0.97 | | 0.73 | 1.00 | | | 0.97 | | 0.61 | 1.00 | |
| Satd. Flow (perm) | | 1423 | | 1212 | 1256 | | | 1519 | | 1059 | 1719 | |
| Peak-hour factor, PHF | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Adj. Flow (vph) | 10 | 6 | 30 | 382 | 5 | 11 | 18 | 119 | 54 | 79 | 113 | 7 |
| RTOR Reduction (vph) | 0 | 15 | 0 | 0 | 6 | 0 | 0 | 12 | 0 | 0 | 2 | 0 |
| Lane Group Flow (vph) | 0 | 31 | 0 | 382 | 10 | 0 | 0 | 179 | 0 | 79 | 118 | 0 |
| Heavy Vehicles (%) | 14% | 20% | 4% | 5% | 25% | 25% | 8% | 11% | 0% | 0% | 1% | 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) | | 712 | | 597 | 619 | | | 625 | | 435 | 707 | |
| v/s Ratio Prot | | | | | 0.01 | | | | | | 0.07 | |
| v/s Ratio Perm | | 0.02 | | c0.32 | | | | c0.12 | | 0.07 | | |
| v/c Ratio | | 0.04 | | 0.64 | 0.02 | | | 0.29 | | 0.18 | 0.17 | |
| Uniform Delay, d1 | | 15.3 | | 22.5 | 15.5 | | | 23.5 | | 22.4 | 22.3 | |
| Progression Factor | | 1.00 | | 1.00 | 1.00 | | | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 0.1 | | 5.2 | 0.0 | | | 1.2 | | 0.9 | 0.5 | |
| Delay (s) | | 15.4 | | 27.7 | 15.6 | | | 24.7 | | 23.4 | 22.8 | |
| Level of Service | | B | | C | B | | | C | | C | C | |
| Approach Delay (s) | | 15.4 | | | 27.2 | | | 24.7 | | | 23.0 | |
| Approach LOS | | B | | | C | | | C | | | C | |

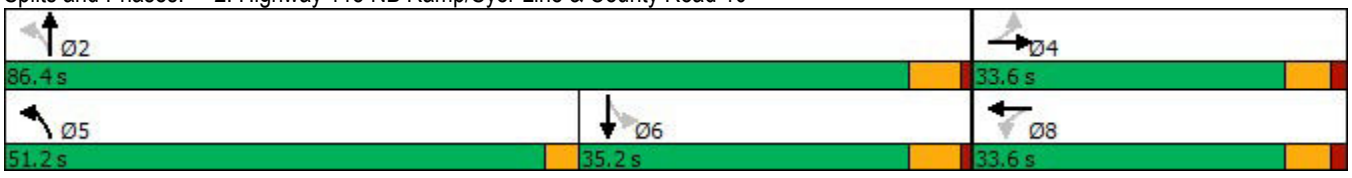
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 25.0 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.48 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 11.4 |
| Intersection Capacity Utilization | 65.4% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

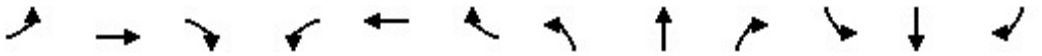
| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Traffic Volume (vph) | 31 | 1 | 2 | 1 | 644 | 142 | 11 | 459 |
| Future Volume (vph) | 31 | 1 | 2 | 1 | 644 | 142 | 11 | 459 |
| Lane Group Flow (vph) | 34 | 15 | 0 | 11 | 700 | 155 | 0 | 532 |
| 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 | 51.2 | 86.4 | 35.2 | 35.2 |
| Total Split (%) | 28.0% | 28.0% | 28.0% | 28.0% | 42.7% | 72.0% | 29.3% | 29.3% |
| 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 | | 0.0 |
| Total Lost Time (s) | 5.8 | 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 | 0.29 | 0.10 | | 0.07 | 0.79 | 0.11 | | 0.34 |
| Control Delay | 48.8 | 22.3 | | 27.8 | 12.2 | 2.3 | | 21.1 |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Total Delay | 48.8 | 22.3 | | 27.8 | 12.2 | 2.3 | | 21.1 |
| Queue Length 50th (m) | 6.7 | 0.2 | | 0.6 | 39.4 | 5.8 | | 39.3 |
| Queue Length 95th (m) | 16.8 | 6.5 | | 6.1 | 92.3 | 11.6 | | 69.8 |
| Internal Link Dist (m) | | 658.6 | | 1175.6 | | 599.4 | | 491.5 |
| Turn Bay Length (m) | 100.0 | | | | 85.0 | | | |
| Base Capacity (vph) | 315 | 364 | | 397 | 1070 | 1436 | | 1558 |
| 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 | 0.11 | 0.04 | | 0.03 | 0.65 | 0.11 | | 0.34 |

**Intersection Summary**

Cycle Length: 120
Actuated Cycle Length: 96.4
Natural Cycle: 100
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) | 31 | 1 | 13 | 2 | 1 | 7 | 644 | 142 | 1 | 11 | 459 | 19 |
| Future Volume (vph) | 31 | 1 | 13 | 2 | 1 | 7 | 644 | 142 | 1 | 11 | 459 | 19 |
| Ideal Flow (vphpl) | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 |
| Total Lost time (s) | 5.8 | 5.8 | | | 5.8 | | 3.0 | 5.6 | | | 5.6 | |
| Lane Util. Factor | 1.00 | 1.00 | | | 1.00 | | 1.00 | 1.00 | | | 0.95 | |
| Frt | 1.00 | 0.86 | | | 0.90 | | 1.00 | 1.00 | | | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | | 0.99 | | 0.95 | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1374 | 1220 | | | 1434 | | 1630 | 1650 | | | 3262 | |
| Flt Permitted | 0.75 | 1.00 | | | 0.93 | | 0.40 | 1.00 | | | 0.95 | |
| Satd. Flow (perm) | 1085 | 1220 | | | 1349 | | 678 | 1650 | | | 3098 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 34 | 1 | 14 | 2 | 1 | 8 | 700 | 154 | 1 | 12 | 499 | 21 |
| RTOR Reduction (vph) | 0 | 13 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Lane Group Flow (vph) | 34 | 2 | 0 | 0 | 3 | 0 | 700 | 155 | 0 | 0 | 530 | 0 |
| Heavy Vehicles (%) | 21% | 0% | 25% | 50% | 0% | 0% | 2% | 6% | 0% | 0% | 1% | 7% |
| 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) | 6.1 | 6.1 | | | 6.1 | | 81.4 | 81.4 | | | 48.5 | |
| Effective Green, g (s) | 6.1 | 6.1 | | | 6.1 | | 81.4 | 81.4 | | | 48.5 | |
| Actuated g/C Ratio | 0.06 | 0.06 | | | 0.06 | | 0.82 | 0.82 | | | 0.49 | |
| Clearance Time (s) | 5.8 | 5.8 | | | 5.8 | | 3.0 | 5.6 | | | 5.6 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | | 3.0 | | 3.0 | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | 66 | 75 | | | 83 | | 845 | 1358 | | | 1519 | |
| v/s Ratio Prot | | 0.00 | | | | | c0.25 | 0.09 | | | | |
| v/s Ratio Perm | c0.03 | | | | 0.00 | | c0.43 | | | | 0.17 | |
| v/c Ratio | 0.52 | 0.02 | | | 0.04 | | 0.83 | 0.11 | | | 0.35 | |
| Uniform Delay, d1 | 45.0 | 43.6 | | | 43.7 | | 5.3 | 1.7 | | | 15.5 | |
| Progression Factor | 1.00 | 1.00 | | | 1.00 | | 1.00 | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | 6.6 | 0.1 | | | 0.2 | | 6.7 | 0.2 | | | 0.6 | |
| Delay (s) | 51.6 | 43.7 | | | 43.9 | | 12.1 | 1.9 | | | 16.1 | |
| Level of Service | D | D | | | D | | B | A | | | B | |
| Approach Delay (s) | | 49.2 | | | 43.9 | | | 10.2 | | | 16.1 | |
| Approach LOS | | D | | | D | | | B | | | B | |

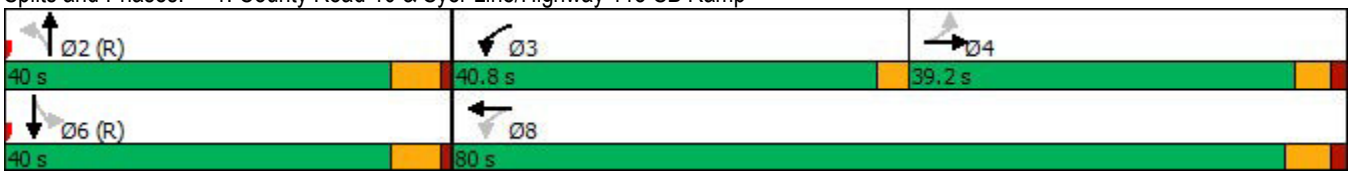
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 14.0 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.83 | | |
| Actuated Cycle Length (s) | 98.9 | Sum of lost time (s) | 14.4 |
| Intersection Capacity Utilization | 77.9% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

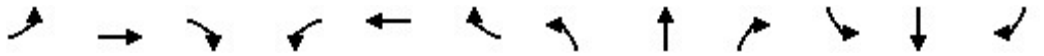
| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Traffic Volume (vph) | 13 | 9 | 698 | 16 | 23 | 271 | 39 | 136 |
| Future Volume (vph) | 13 | 9 | 698 | 16 | 23 | 271 | 39 | 136 |
| Lane Group Flow (vph) | 0 | 53 | 720 | 20 | 0 | 329 | 40 | 146 |
| 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 | 40.8 | 80.0 | 40.0 | 40.0 | 40.0 | 40.0 |
| Total Split (%) | 32.7% | 32.7% | 34.0% | 66.7% | 33.3% | 33.3% | 33.3% | 33.3% |
| 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 | | 0.11 | 0.78 | 0.02 | | 0.69 | 0.21 | 0.30 |
| Control Delay | | 17.1 | 20.9 | 7.7 | | 46.5 | 36.2 | 35.0 |
| Queue Delay | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Delay | | 17.1 | 20.9 | 7.7 | | 46.5 | 36.2 | 35.0 |
| Queue Length 50th (m) | | 4.0 | 104.6 | 1.4 | | 71.8 | 7.5 | 27.8 |
| Queue Length 95th (m) | | 14.2 | 148.9 | 4.6 | | 106.2 | 17.7 | 46.7 |
| Internal Link Dist (m) | | 592.7 | | 625.0 | | 491.5 | | 559.6 |
| Turn Bay Length (m) | | | 100.0 | | | | 82.0 | |
| Base Capacity (vph) | | 482 | 934 | 938 | | 474 | 189 | 486 |
| 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 | | 0.11 | 0.77 | 0.02 | | 0.69 | 0.21 | 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: 80
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) | 13 | 9 | 30 | 698 | 16 | 4 | 23 | 271 | 25 | 39 | 136 | 6 |
| Future Volume (vph) | 13 | 9 | 30 | 698 | 16 | 4 | 23 | 271 | 25 | 39 | 136 | 6 |
| 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 | | 0.92 | | 1.00 | 0.97 | | | 0.99 | | 1.00 | 0.99 | |
| Flt Protected | | 0.99 | | 0.95 | 1.00 | | | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1521 | | 1662 | 1516 | | | 1690 | | 1662 | 1691 | |
| Flt Permitted | | 0.95 | | 0.72 | 1.00 | | | 0.97 | | 0.38 | 1.00 | |
| Satd. Flow (perm) | | 1466 | | 1258 | 1516 | | | 1647 | | 661 | 1691 | |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 13 | 9 | 31 | 720 | 16 | 4 | 24 | 279 | 26 | 40 | 140 | 6 |
| RTOR Reduction (vph) | 0 | 21 | 0 | 0 | 2 | 0 | 0 | 3 | 0 | 0 | 1 | 0 |
| Lane Group Flow (vph) | 0 | 32 | 0 | 720 | 18 | 0 | 0 | 326 | 0 | 40 | 145 | 0 |
| Heavy Vehicles (%) | 0% | 14% | 4% | 0% | 15% | 0% | 5% | 2% | 0% | 0% | 3% | 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) | | 37.8 | | 74.2 | 74.2 | | | 34.4 | | 34.4 | 34.4 | |
| Effective Green, g (s) | | 37.8 | | 74.2 | 74.2 | | | 34.4 | | 34.4 | 34.4 | |
| Actuated g/C Ratio | | 0.31 | | 0.62 | 0.62 | | | 0.29 | | 0.29 | 0.29 | |
| 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) | | 461 | | 893 | 937 | | | 472 | | 189 | 484 | |
| v/s Ratio Prot | | | | c0.23 | 0.01 | | | | | | 0.09 | |
| v/s Ratio Perm | | 0.02 | | c0.27 | | | | c0.20 | | 0.06 | | |
| v/c Ratio | | 0.07 | | 0.81 | 0.02 | | | 0.69 | | 0.21 | 0.30 | |
| Uniform Delay, d1 | | 28.8 | | 15.6 | 8.8 | | | 38.1 | | 32.5 | 33.4 | |
| Progression Factor | | 1.00 | | 1.00 | 1.00 | | | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 0.3 | | 5.4 | 0.0 | | | 8.1 | | 2.5 | 1.6 | |
| Delay (s) | | 29.1 | | 20.9 | 8.9 | | | 46.1 | | 35.0 | 35.0 | |
| Level of Service | | C | | C | A | | | D | | D | C | |
| Approach Delay (s) | | 29.1 | | | 20.6 | | | 46.1 | | | 35.0 | |
| Approach LOS | | C | | | C | | | D | | | C | |

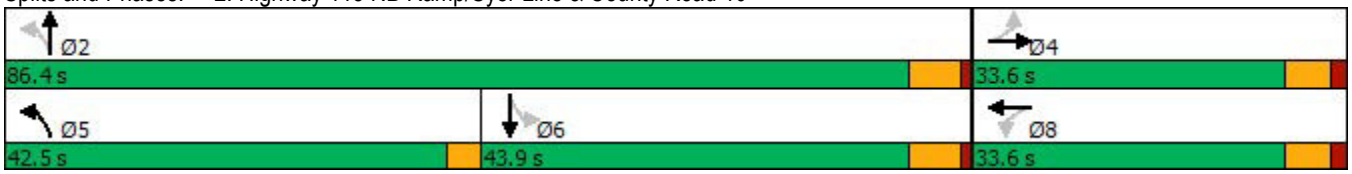
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 29.4 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.78 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 96.1% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

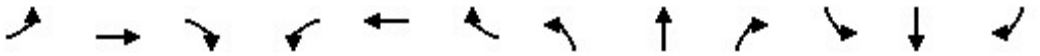
| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Traffic Volume (vph) | 120 | 3 | 7 | 9 | 544 | 191 | 13 | 817 |
| Future Volume (vph) | 120 | 3 | 7 | 9 | 544 | 191 | 13 | 817 |
| Lane Group Flow (vph) | 136 | 59 | 0 | 31 | 618 | 231 | 0 | 975 |
| 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 | 42.5 | 86.4 | 43.9 | 43.9 |
| Total Split (%) | 28.0% | 28.0% | 28.0% | 28.0% | 35.4% | 72.0% | 36.6% | 36.6% |
| 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 | | 0.0 |
| Total Lost Time (s) | 5.8 | 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 | 0.70 | 0.21 | | 0.12 | 0.92 | 0.18 | | 0.90 |
| Control Delay | 62.5 | 12.9 | | 27.0 | 46.8 | 5.2 | | 46.2 |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Total Delay | 62.5 | 12.9 | | 27.0 | 46.8 | 5.2 | | 46.2 |
| Queue Length 50th (m) | 29.2 | 0.6 | | 3.5 | 110.2 | 12.9 | | 107.5 |
| Queue Length 95th (m) | 49.2 | 11.6 | | 11.8 | #199.9 | 26.9 | | #160.1 |
| Internal Link Dist (m) | | 658.6 | | 1175.6 | | 599.4 | | 491.5 |
| Turn Bay Length (m) | | | | | 85.0 | | | |
| Base Capacity (vph) | 318 | 424 | | 400 | 672 | 1272 | | 1089 |
| 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 | 0.43 | 0.14 | | 0.08 | 0.92 | 0.18 | | 0.90 |

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 109.5
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) | 120 | 3 | 49 | 7 | 9 | 11 | 544 | 191 | 12 | 13 | 817 | 28 |
| Future Volume (vph) | 120 | 3 | 49 | 7 | 9 | 11 | 544 | 191 | 12 | 13 | 817 | 28 |
| Ideal Flow (vphpl) | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 |
| Total Lost time (s) | 5.8 | 5.8 | | | 5.8 | | 3.0 | 5.6 | | | 5.6 | |
| Lane Util. Factor | 1.00 | 1.00 | | | 1.00 | | 1.00 | 1.00 | | | 0.95 | |
| Frt | 1.00 | 0.86 | | | 0.94 | | 1.00 | 0.99 | | | 1.00 | |
| Flt Protected | 0.95 | 1.00 | | | 0.99 | | 0.95 | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1614 | 1501 | | | 1630 | | 1646 | 1718 | | | 3270 | |
| Flt Permitted | 0.74 | 1.00 | | | 0.93 | | 0.11 | 1.00 | | | 0.95 | |
| Satd. Flow (perm) | 1252 | 1501 | | | 1538 | | 192 | 1718 | | | 3103 | |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Adj. Flow (vph) | 136 | 3 | 56 | 8 | 10 | 12 | 618 | 217 | 14 | 15 | 928 | 32 |
| RTOR Reduction (vph) | 0 | 47 | 0 | 0 | 11 | 0 | 0 | 2 | 0 | 0 | 2 | 0 |
| Lane Group Flow (vph) | 136 | 12 | 0 | 0 | 20 | 0 | 618 | 229 | 0 | 0 | 973 | 0 |
| Heavy Vehicles (%) | 3% | 0% | 0% | 0% | 0% | 0% | 1% | 1% | 0% | 0% | 1% | 5% |
| 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) | 17.1 | 17.1 | | | 17.1 | | 81.0 | 81.0 | | | 38.4 | |
| Effective Green, g (s) | 17.1 | 17.1 | | | 17.1 | | 81.0 | 81.0 | | | 38.4 | |
| Actuated g/C Ratio | 0.16 | 0.16 | | | 0.16 | | 0.74 | 0.74 | | | 0.35 | |
| Clearance Time (s) | 5.8 | 5.8 | | | 5.8 | | 3.0 | 5.6 | | | 5.6 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | | 3.0 | | 3.0 | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | 195 | 234 | | | 240 | | 667 | 1270 | | | 1088 | |
| v/s Ratio Prot | | 0.01 | | | | | c0.33 | 0.13 | | | | |
| v/s Ratio Perm | c0.11 | | | | 0.01 | | c0.35 | | | | 0.31 | |
| v/c Ratio | 0.70 | 0.05 | | | 0.08 | | 0.93 | 0.18 | | | 0.89 | |
| Uniform Delay, d1 | 43.8 | 39.3 | | | 39.5 | | 27.0 | 4.3 | | | 33.6 | |
| Progression Factor | 1.00 | 1.00 | | | 1.00 | | 1.00 | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | 10.4 | 0.1 | | | 0.2 | | 18.9 | 0.3 | | | 11.3 | |
| Delay (s) | 54.1 | 39.4 | | | 39.7 | | 45.8 | 4.6 | | | 44.9 | |
| Level of Service | D | D | | | D | | D | A | | | D | |
| Approach Delay (s) | | 49.7 | | | 39.7 | | | 34.6 | | | 44.9 | |
| Approach LOS | | D | | | D | | | C | | | D | |

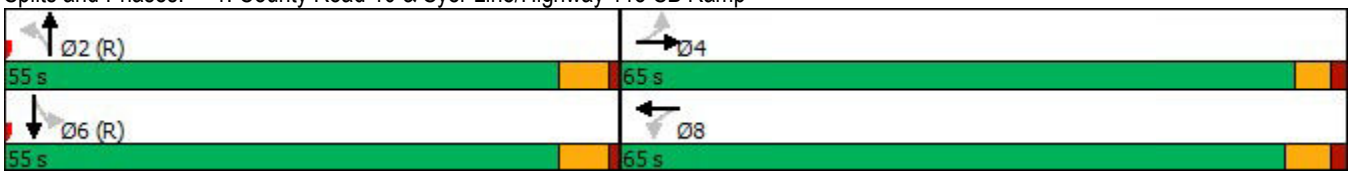
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 41.0 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.91 | | |
| Actuated Cycle Length (s) | 109.5 | Sum of lost time (s) | 14.4 |
| Intersection Capacity Utilization | 86.7% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

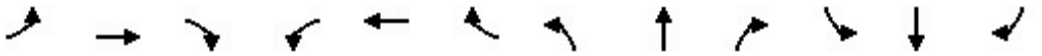
| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Traffic Volume (vph) | 9 | 7 | 381 | 6 | 19 | 127 | 83 | 119 |
| Future Volume (vph) | 9 | 7 | 381 | 6 | 19 | 127 | 83 | 119 |
| Lane Group Flow (vph) | 0 | 50 | 405 | 27 | 0 | 214 | 88 | 136 |
| 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 | 0.68 | 0.04 | | 0.34 | 0.21 | 0.19 |
| Control Delay | | 7.7 | 30.4 | 7.7 | | 23.7 | 24.5 | 22.8 |
| Queue Delay | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Delay | | 7.7 | 30.4 | 7.7 | | 23.7 | 24.5 | 22.8 |
| Queue Length 50th (m) | | 2.1 | 74.3 | 0.7 | | 32.3 | 13.8 | 20.5 |
| Queue Length 95th (m) | | 8.8 | 114.0 | 5.8 | | 52.5 | 26.5 | 34.9 |
| Internal Link Dist (m) | | 592.7 | | 625.0 | | 491.5 | | 559.6 |
| Turn Bay Length (m) | | | 100.0 | | | | 82.0 | |
| Base Capacity (vph) | | 729 | 595 | 620 | | 635 | 418 | 708 |
| 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 | 0.68 | 0.04 | | 0.34 | 0.21 | 0.19 |

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





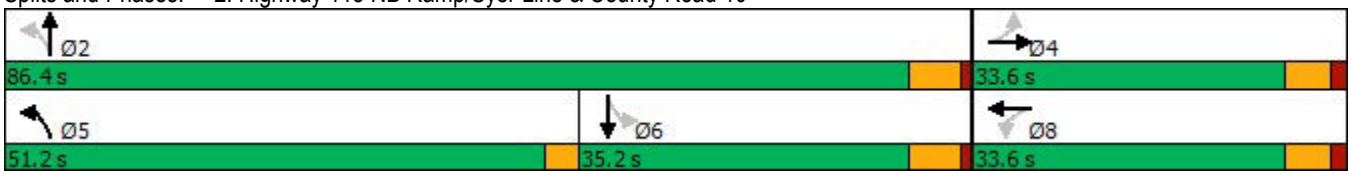
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 9 | 7 | 31 | 381 | 6 | 20 | 19 | 127 | 55 | 83 | 119 | 8 |
| Future Volume (vph) | 9 | 7 | 31 | 381 | 6 | 20 | 19 | 127 | 55 | 83 | 119 | 8 |
| 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 | | 0.91 | | 1.00 | 0.88 | | | 0.96 | | 1.00 | 0.99 | |
| Flt Protected | | 0.99 | | 0.95 | 1.00 | | | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1458 | | 1583 | 1237 | | | 1557 | | 1662 | 1717 | |
| Flt Permitted | | 0.97 | | 0.72 | 1.00 | | | 0.97 | | 0.58 | 1.00 | |
| Satd. Flow (perm) | | 1424 | | 1207 | 1237 | | | 1516 | | 1018 | 1717 | |
| Peak-hour factor, PHF | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Adj. Flow (vph) | 10 | 7 | 33 | 405 | 6 | 21 | 20 | 135 | 59 | 88 | 127 | 9 |
| RTOR Reduction (vph) | 0 | 16 | 0 | 0 | 11 | 0 | 0 | 11 | 0 | 0 | 2 | 0 |
| Lane Group Flow (vph) | 0 | 34 | 0 | 405 | 16 | 0 | 0 | 203 | 0 | 88 | 134 | 0 |
| Heavy Vehicles (%) | 14% | 20% | 4% | 5% | 25% | 25% | 8% | 11% | 0% | 0% | 1% | 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) | | 713 | | 595 | 610 | | | 624 | | 419 | 706 | |
| v/s Ratio Prot | | | | | 0.01 | | | | | | 0.08 | |
| v/s Ratio Perm | | 0.02 | | c0.34 | | | | c0.13 | | 0.09 | | |
| v/c Ratio | | 0.05 | | 0.68 | 0.03 | | | 0.33 | | 0.21 | 0.19 | |
| Uniform Delay, d1 | | 15.3 | | 23.2 | 15.6 | | | 24.0 | | 22.7 | 22.5 | |
| Progression Factor | | 1.00 | | 1.00 | 1.00 | | | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 0.1 | | 6.2 | 0.1 | | | 1.4 | | 1.1 | 0.6 | |
| Delay (s) | | 15.4 | | 29.4 | 15.7 | | | 25.4 | | 23.9 | 23.1 | |
| Level of Service | | B | | C | B | | | C | | C | C | |
| Approach Delay (s) | | 15.4 | | | 28.5 | | | 25.4 | | | 23.4 | |
| Approach LOS | | B | | | C | | | C | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 25.8 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.52 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 11.4 |
| Intersection Capacity Utilization | 70.1% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Traffic Volume (vph) | 37 | 2 | 3 | 2 | 670 | 155 | 19 | 482 |
| Future Volume (vph) | 37 | 2 | 3 | 2 | 670 | 155 | 19 | 482 |
| Lane Group Flow (vph) | 40 | 17 | 0 | 15 | 728 | 170 | 0 | 570 |
| 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 | 51.2 | 86.4 | 35.2 | 35.2 |
| Total Split (%) | 28.0% | 28.0% | 28.0% | 28.0% | 42.7% | 72.0% | 29.3% | 29.3% |
| 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 | | 0.0 |
| Total Lost Time (s) | 5.8 | 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 | 0.34 | 0.11 | | 0.10 | 0.82 | 0.12 | | 0.47 |
| Control Delay | 51.3 | 22.5 | | 27.3 | 16.8 | 2.8 | | 28.1 |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Total Delay | 51.3 | 22.5 | | 27.3 | 16.8 | 2.8 | | 28.1 |
| Queue Length 50th (m) | 8.0 | 0.4 | | 1.0 | 61.7 | 6.5 | | 49.6 |
| Queue Length 95th (m) | 19.1 | 7.1 | | 7.3 | 123.5 | 13.2 | | 76.4 |
| Internal Link Dist (m) | | 658.6 | | 1175.6 | | 599.4 | | 491.5 |
| Turn Bay Length (m) | 100.0 | | | | 85.0 | | | |
| Base Capacity (vph) | 302 | 358 | | 386 | 996 | 1362 | | 1220 |
| 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 | 0.13 | 0.05 | | 0.04 | 0.73 | 0.12 | | 0.47 |

| Intersection Summary |
|---|
| Cycle Length: 120 |
| Actuated Cycle Length: 99.9 |
| Natural Cycle: 100 |
| 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) | 37 | 2 | 14 | 3 | 2 | 9 | 670 | 155 | 2 | 19 | 482 | 23 |
| Future Volume (vph) | 37 | 2 | 14 | 3 | 2 | 9 | 670 | 155 | 2 | 19 | 482 | 23 |
| Ideal Flow (vphpl) | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 |
| Total Lost time (s) | 5.8 | 5.8 | | | 5.8 | | 3.0 | 5.6 | | | 5.6 | |
| Lane Util. Factor | 1.00 | 1.00 | | | 1.00 | | 1.00 | 1.00 | | | 0.95 | |
| Frt | 1.00 | 0.87 | | | 0.91 | | 1.00 | 1.00 | | | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | | 0.99 | | 0.95 | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1374 | 1244 | | | 1433 | | 1630 | 1649 | | | 3257 | |
| Flt Permitted | 0.75 | 1.00 | | | 0.94 | | 0.34 | 1.00 | | | 0.94 | |
| Satd. Flow (perm) | 1081 | 1244 | | | 1357 | | 580 | 1649 | | | 3069 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 40 | 2 | 15 | 3 | 2 | 10 | 728 | 168 | 2 | 21 | 524 | 25 |
| RTOR Reduction (vph) | 0 | 14 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Lane Group Flow (vph) | 40 | 3 | 0 | 0 | 6 | 0 | 728 | 170 | 0 | 0 | 568 | 0 |
| Heavy Vehicles (%) | 21% | 0% | 25% | 50% | 0% | 0% | 2% | 6% | 0% | 0% | 1% | 7% |
| 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) | 8.5 | 8.5 | | | 8.5 | | 81.2 | 81.2 | | | 39.6 | |
| Effective Green, g (s) | 8.5 | 8.5 | | | 8.5 | | 81.2 | 81.2 | | | 39.6 | |
| Actuated g/C Ratio | 0.08 | 0.08 | | | 0.08 | | 0.80 | 0.80 | | | 0.39 | |
| Clearance Time (s) | 5.8 | 5.8 | | | 5.8 | | 3.0 | 5.6 | | | 5.6 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | | 3.0 | | 3.0 | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | 90 | 104 | | | 114 | | 866 | 1324 | | | 1202 | |
| v/s Ratio Prot | | 0.00 | | | | | c0.32 | 0.10 | | | | |
| v/s Ratio Perm | c0.04 | | | | 0.00 | | c0.35 | | | | 0.18 | |
| v/c Ratio | 0.44 | 0.03 | | | 0.05 | | 0.84 | 0.13 | | | 0.47 | |
| Uniform Delay, d1 | 44.1 | 42.5 | | | 42.6 | | 10.4 | 2.2 | | | 23.0 | |
| Progression Factor | 1.00 | 1.00 | | | 1.00 | | 1.00 | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | 3.5 | 0.1 | | | 0.2 | | 7.4 | 0.2 | | | 1.3 | |
| Delay (s) | 47.5 | 42.6 | | | 42.8 | | 17.8 | 2.4 | | | 24.3 | |
| Level of Service | D | D | | | D | | B | A | | | C | |
| Approach Delay (s) | | 46.1 | | | 42.8 | | | 14.9 | | | 24.3 | |
| Approach LOS | | D | | | D | | | B | | | C | |

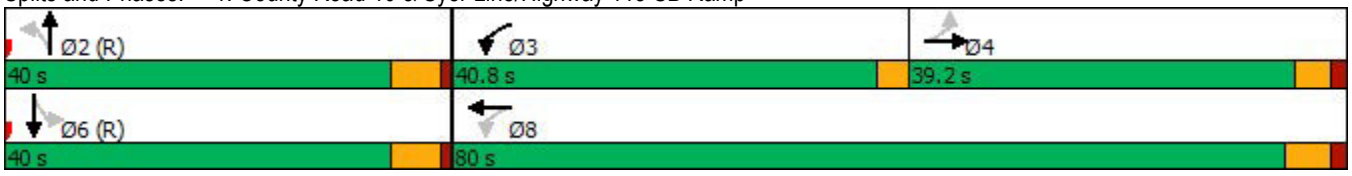
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 19.8 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.83 | | |
| Actuated Cycle Length (s) | 101.1 | Sum of lost time (s) | 14.4 |
| Intersection Capacity Utilization | 79.5% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

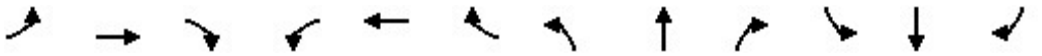
| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Traffic Volume (vph) | 15 | 10 | 731 | 18 | 26 | 300 | 45 | 157 |
| Future Volume (vph) | 15 | 10 | 731 | 18 | 26 | 300 | 45 | 157 |
| Lane Group Flow (vph) | 0 | 60 | 754 | 25 | 0 | 365 | 46 | 169 |
| 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 | 40.8 | 80.0 | 40.0 | 40.0 | 40.0 | 40.0 |
| Total Split (%) | 32.7% | 32.7% | 34.0% | 66.7% | 33.3% | 33.3% | 33.3% | 33.3% |
| 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 | | 0.13 | 0.82 | 0.03 | | 0.77 | 0.27 | 0.35 |
| Control Delay | | 16.9 | 23.4 | 7.4 | | 51.3 | 38.3 | 36.0 |
| Queue Delay | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Delay | | 16.9 | 23.4 | 7.4 | | 51.3 | 38.3 | 36.0 |
| Queue Length 50th (m) | | 4.5 | 113.7 | 1.7 | | 82.1 | 8.8 | 32.8 |
| Queue Length 95th (m) | | 15.4 | 162.1 | 5.2 | | #126.5 | 20.2 | 53.2 |
| Internal Link Dist (m) | | 592.7 | | 625.0 | | 491.5 | | 559.6 |
| Turn Bay Length (m) | | | 100.0 | | | | 82.0 | |
| Base Capacity (vph) | | 470 | 927 | 938 | | 472 | 172 | 486 |
| 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 | | 0.13 | 0.81 | 0.03 | | 0.77 | 0.27 | 0.35 |

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) | 15 | 10 | 34 | 731 | 18 | 6 | 26 | 300 | 28 | 45 | 157 | 7 |
| Future Volume (vph) | 15 | 10 | 34 | 731 | 18 | 6 | 26 | 300 | 28 | 45 | 157 | 7 |
| 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 | | 0.92 | | 1.00 | 0.96 | | | 0.99 | | 1.00 | 0.99 | |
| Flt Protected | | 0.99 | | 0.95 | 1.00 | | | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1521 | | 1662 | 1514 | | | 1690 | | 1662 | 1691 | |
| Flt Permitted | | 0.95 | | 0.71 | 1.00 | | | 0.97 | | 0.34 | 1.00 | |
| Satd. Flow (perm) | | 1460 | | 1235 | 1514 | | | 1641 | | 600 | 1691 | |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 15 | 10 | 35 | 754 | 19 | 6 | 27 | 309 | 29 | 46 | 162 | 7 |
| RTOR Reduction (vph) | 0 | 24 | 0 | 0 | 2 | 0 | 0 | 3 | 0 | 0 | 1 | 0 |
| Lane Group Flow (vph) | 0 | 36 | 0 | 754 | 23 | 0 | 0 | 362 | 0 | 46 | 168 | 0 |
| Heavy Vehicles (%) | 0% | 14% | 4% | 0% | 15% | 0% | 5% | 2% | 0% | 0% | 3% | 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) | | 36.7 | | 74.2 | 74.2 | | | 34.4 | | 34.4 | 34.4 | |
| Effective Green, g (s) | | 36.7 | | 74.2 | 74.2 | | | 34.4 | | 34.4 | 34.4 | |
| Actuated g/C Ratio | | 0.31 | | 0.62 | 0.62 | | | 0.29 | | 0.29 | 0.29 | |
| 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) | | 446 | | 889 | 936 | | | 470 | | 172 | 484 | |
| v/s Ratio Prot | | | | c0.25 | 0.01 | | | | | | 0.10 | |
| v/s Ratio Perm | | 0.02 | | c0.27 | | | | c0.22 | | 0.08 | | |
| v/c Ratio | | 0.08 | | 0.85 | 0.02 | | | 0.77 | | 0.27 | 0.35 | |
| Uniform Delay, d1 | | 29.6 | | 16.4 | 8.9 | | | 39.2 | | 33.1 | 33.9 | |
| Progression Factor | | 1.00 | | 1.00 | 1.00 | | | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 0.4 | | 7.6 | 0.0 | | | 11.6 | | 3.8 | 2.0 | |
| Delay (s) | | 30.0 | | 23.9 | 8.9 | | | 50.8 | | 36.8 | 35.9 | |
| Level of Service | | C | | C | A | | | D | | D | D | |
| Approach Delay (s) | | 30.0 | | | 23.5 | | | 50.8 | | | 36.1 | |
| Approach LOS | | C | | | C | | | D | | | D | |

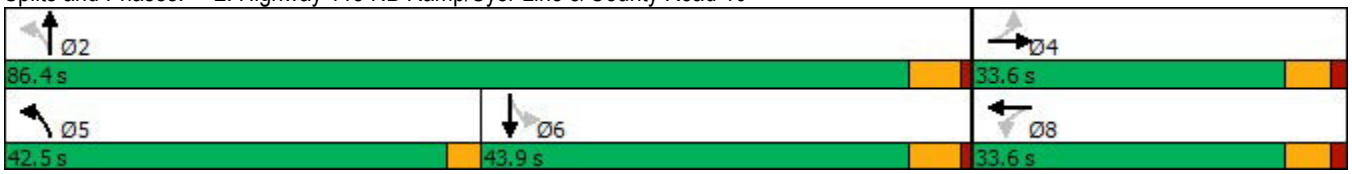
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 32.7 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.84 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 102.0% | ICU Level of Service | G |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

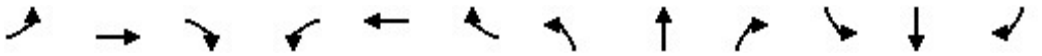
| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Traffic Volume (vph) | 135 | 3 | 9 | 14 | 572 | 208 | 16 | 856 |
| Future Volume (vph) | 135 | 3 | 9 | 14 | 572 | 208 | 16 | 856 |
| Lane Group Flow (vph) | 153 | 62 | 0 | 43 | 650 | 251 | 0 | 1035 |
| 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 | 42.5 | 86.4 | 43.9 | 43.9 |
| Total Split (%) | 28.0% | 28.0% | 28.0% | 28.0% | 35.4% | 72.0% | 36.6% | 36.6% |
| 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 | | 0.0 |
| Total Lost Time (s) | 5.8 | 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 | 0.73 | 0.21 | | 0.16 | 1.00 | 0.20 | | 0.97 |
| Control Delay | 63.9 | 12.2 | | 27.2 | 64.6 | 5.9 | | 57.4 |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Total Delay | 63.9 | 12.2 | | 27.2 | 64.6 | 5.9 | | 57.4 |
| Queue Length 50th (m) | 33.4 | 0.6 | | 5.1 | 129.3 | 15.4 | | 120.8 |
| Queue Length 95th (m) | 54.7 | 11.6 | | 14.7 | #228.8 | 31.4 | | #182.5 |
| Internal Link Dist (m) | | 658.6 | | 1175.6 | | 599.4 | | 491.5 |
| Turn Bay Length (m) | 100.0 | | | | 85.0 | | | |
| Base Capacity (vph) | 310 | 419 | | 401 | 652 | 1253 | | 1070 |
| 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 | 0.49 | 0.15 | | 0.11 | 1.00 | 0.20 | | 0.97 |

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 111.2
Natural Cycle: 140
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) | 135 | 3 | 52 | 9 | 14 | 15 | 572 | 208 | 13 | 16 | 856 | 39 |
| Future Volume (vph) | 135 | 3 | 52 | 9 | 14 | 15 | 572 | 208 | 13 | 16 | 856 | 39 |
| Ideal Flow (vphpl) | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 |
| Total Lost time (s) | 5.8 | 5.8 | | | 5.8 | | 3.0 | 5.6 | | | 5.6 | |
| Lane Util. Factor | 1.00 | 1.00 | | | 1.00 | | 1.00 | 1.00 | | | 0.95 | |
| Frt | 1.00 | 0.86 | | | 0.95 | | 1.00 | 0.99 | | | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | | 0.99 | | 0.95 | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1614 | 1500 | | | 1638 | | 1646 | 1718 | | | 3263 | |
| Flt Permitted | 0.73 | 1.00 | | | 0.94 | | 0.10 | 1.00 | | | 0.95 | |
| Satd. Flow (perm) | 1239 | 1500 | | | 1551 | | 167 | 1718 | | | 3091 | |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Adj. Flow (vph) | 153 | 3 | 59 | 10 | 16 | 17 | 650 | 236 | 15 | 18 | 973 | 44 |
| RTOR Reduction (vph) | 0 | 49 | 0 | 0 | 14 | 0 | 0 | 2 | 0 | 0 | 3 | 0 |
| Lane Group Flow (vph) | 153 | 13 | 0 | 0 | 29 | 0 | 650 | 249 | 0 | 0 | 1032 | 0 |
| Heavy Vehicles (%) | 3% | 0% | 0% | 0% | 0% | 0% | 1% | 1% | 0% | 0% | 1% | 5% |
| 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) | 18.8 | 18.8 | | | 18.8 | | 81.0 | 81.0 | | | 38.4 | |
| Effective Green, g (s) | 18.8 | 18.8 | | | 18.8 | | 81.0 | 81.0 | | | 38.4 | |
| Actuated g/C Ratio | 0.17 | 0.17 | | | 0.17 | | 0.73 | 0.73 | | | 0.35 | |
| Clearance Time (s) | 5.8 | 5.8 | | | 5.8 | | 3.0 | 5.6 | | | 5.6 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | | 3.0 | | 3.0 | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | 209 | 253 | | | 262 | | 648 | 1251 | | | 1067 | |
| v/s Ratio Prot | | 0.01 | | | | | c0.36 | 0.15 | | | | |
| v/s Ratio Perm | c0.12 | | | | 0.02 | | c0.37 | | | | 0.33 | |
| v/c Ratio | 0.73 | 0.05 | | | 0.11 | | 1.00 | 0.20 | | | 0.97 | |
| Uniform Delay, d1 | 43.8 | 38.7 | | | 39.1 | | 30.4 | 4.8 | | | 35.8 | |
| Progression Factor | 1.00 | 1.00 | | | 1.00 | | 1.00 | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | 12.4 | 0.1 | | | 0.2 | | 36.1 | 0.4 | | | 20.8 | |
| Delay (s) | 56.2 | 38.8 | | | 39.3 | | 66.5 | 5.2 | | | 56.6 | |
| Level of Service | E | D | | | D | | E | A | | | E | |
| Approach Delay (s) | | 51.2 | | | 39.3 | | | 49.4 | | | 56.6 | |
| Approach LOS | | D | | | D | | | D | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 52.8 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.98 | | |
| Actuated Cycle Length (s) | 111.2 | Sum of lost time (s) | 14.4 |
| Intersection Capacity Utilization | 90.9% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

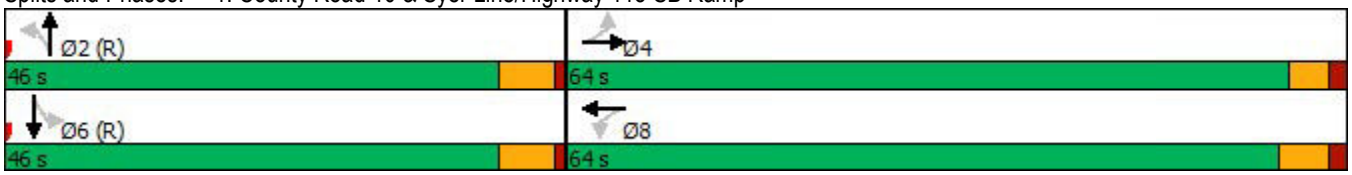
# Appendix F –
# Synchro Analysis Output –
# Total Traffic Volumes

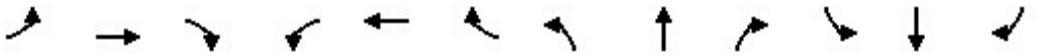
| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Traffic Volume (vph) | 8 | 6 | 388 | 4 | 15 | 105 | 66 | 122 |
| Future Volume (vph) | 8 | 6 | 388 | 4 | 15 | 105 | 66 | 122 |
| Lane Group Flow (vph) | 0 | 42 | 0 | 421 | 0 | 178 | 70 | 137 |
| 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 | | 0.69 | | 0.31 | 0.18 | 0.22 |
| Control Delay | | 6.5 | | 26.3 | | 23.8 | 25.2 | 24.5 |
| Queue Delay | | 0.0 | | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Delay | | 6.5 | | 26.3 | | 23.8 | 25.2 | 24.5 |
| Queue Length 50th (m) | | 1.5 | | 67.1 | | 25.0 | 10.6 | 20.5 |
| Queue Length 95th (m) | | 6.9 | | 107.5 | | 43.5 | 21.7 | 35.5 |
| Internal Link Dist (m) | | 592.7 | | 625.0 | | 491.5 | | 559.6 |
| Turn Bay Length (m) | | | | | | | 82.0 | |
| Base Capacity (vph) | | 742 | | 614 | | 570 | 392 | 633 |
| 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 | | 0.69 | | 0.31 | 0.18 | 0.22 |

**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) | 8 | 6 | 25 | 388 | 4 | 4 | 15 | 105 | 47 | 66 | 122 | 7 |
| Future Volume (vph) | 8 | 6 | 25 | 388 | 4 | 4 | 15 | 105 | 47 | 66 | 122 | 7 |
| 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 | | 0.91 | | | 1.00 | | | 0.96 | | 1.00 | 0.99 | |
| Flt Protected | | 0.99 | | | 0.95 | | | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1458 | | | 1581 | | | 1557 | | 1662 | 1720 | |
| Flt Permitted | | 0.92 | | | 0.70 | | | 0.97 | | 0.61 | 1.00 | |
| Satd. Flow (perm) | | 1359 | | | 1160 | | | 1520 | | 1070 | 1720 | |
| Peak-hour factor, PHF | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Adj. Flow (vph) | 9 | 6 | 27 | 413 | 4 | 4 | 16 | 112 | 50 | 70 | 130 | 7 |
| RTOR Reduction (vph) | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 2 | 0 |
| Lane Group Flow (vph) | 0 | 30 | 0 | 0 | 421 | 0 | 0 | 165 | 0 | 70 | 135 | 0 |
| Heavy Vehicles (%) | 14% | 20% | 4% | 5% | 25% | 25% | 8% | 11% | 0% | 0% | 1% | 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) | | 730 | | | 613 | | | 558 | | 392 | 631 | |
| v/s Ratio Prot | | | | | | | | | | | 0.08 | |
| v/s Ratio Perm | | 0.02 | | | c0.36 | | | c0.11 | | 0.07 | | |
| v/c Ratio | | 0.04 | | | 0.69 | | | 0.30 | | 0.18 | 0.21 | |
| Uniform Delay, d1 | | 12.0 | | | 19.1 | | | 24.7 | | 23.6 | 23.9 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 0.1 | | | 6.1 | | | 1.4 | | 1.0 | 0.8 | |
| Delay (s) | | 12.1 | | | 25.3 | | | 26.1 | | 24.6 | 24.7 | |
| Level of Service | | B | | | C | | | C | | C | C | |
| Approach Delay (s) | | 12.1 | | | 25.3 | | | 26.1 | | | 24.6 | |
| Approach LOS | | B | | | C | | | C | | | C | |

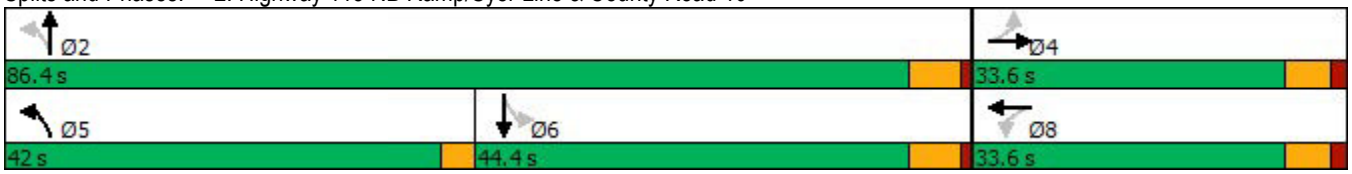
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 24.6 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.53 | | |
| Actuated Cycle Length (s) | 110.0 | Sum of lost time (s) | 11.4 |
| Intersection Capacity Utilization | 65.4% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

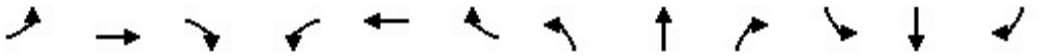
| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Traffic Volume (vph) | 27 | 11 | 5 | 12 | 586 | 127 | 89 | 428 |
| Future Volume (vph) | 27 | 11 | 5 | 12 | 586 | 127 | 89 | 428 |
| Lane Group Flow (vph) | 0 | 53 | 0 | 33 | 637 | 153 | 0 | 579 |
| 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 | 42.0 | 86.4 | 44.4 | 44.4 |
| Total Split (%) | 28.0% | 28.0% | 28.0% | 28.0% | 35.0% | 72.0% | 37.0% | 37.0% |
| 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 | | 0.39 | | 0.20 | 0.79 | 0.11 | | 0.73 |
| Control Delay | | 44.7 | | 30.3 | 13.1 | 2.6 | | 31.9 |
| Queue Delay | | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Total Delay | | 44.7 | | 30.3 | 13.1 | 2.6 | | 31.9 |
| Queue Length 50th (m) | | 8.4 | | 3.5 | 30.5 | 5.4 | | 100.8 |
| Queue Length 95th (m) | | 21.0 | | 12.8 | 85.5 | 11.4 | | #198.8 |
| Internal Link Dist (m) | | 658.6 | | 1175.6 | | 599.4 | | 491.5 |
| Turn Bay Length (m) | | | | | 85.0 | | | |
| Base Capacity (vph) | | 336 | | 413 | 923 | 1353 | | 793 |
| 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 | | 0.08 | 0.69 | 0.11 | | 0.73 |

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 99.8
Natural Cycle: 110
Control Type: Semi Act-Uncoord
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

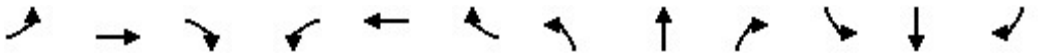
Splits and Phases: 2: Highway 115 NB Ramp/Syer Line & County Road 10





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 27 | 11 | 11 | 5 | 12 | 14 | 586 | 127 | 14 | 89 | 428 | 16 |
| Future Volume (vph) | 27 | 11 | 11 | 5 | 12 | 14 | 586 | 127 | 14 | 89 | 428 | 16 |
| 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 | | 0.97 | | | 0.94 | | 1.00 | 0.99 | | | 1.00 | |
| Flt Protected | | 0.97 | | | 0.99 | | 0.95 | 1.00 | | | 0.99 | |
| Satd. Flow (prot) | | 1410 | | | 1515 | | 1630 | 1636 | | | 1711 | |
| Flt Permitted | | 0.81 | | | 0.94 | | 0.37 | 1.00 | | | 0.91 | |
| Satd. Flow (perm) | | 1175 | | | 1438 | | 633 | 1636 | | | 1578 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 29 | 12 | 12 | 5 | 13 | 15 | 637 | 138 | 15 | 97 | 465 | 17 |
| RTOR Reduction (vph) | 0 | 10 | 0 | 0 | 14 | 0 | 0 | 2 | 0 | 0 | 1 | 0 |
| Lane Group Flow (vph) | 0 | 43 | 0 | 0 | 19 | 0 | 637 | 151 | 0 | 0 | 578 | 0 |
| Heavy Vehicles (%) | 21% | 0% | 25% | 50% | 0% | 0% | 2% | 6% | 0% | 0% | 1% | 7% |
| 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) | | 8.5 | | | 8.5 | | 81.2 | 81.2 | | | 50.2 | |
| Effective Green, g (s) | | 8.5 | | | 8.5 | | 81.2 | 81.2 | | | 50.2 | |
| Actuated g/C Ratio | | 0.08 | | | 0.08 | | 0.80 | 0.80 | | | 0.50 | |
| 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 | | | 120 | | 784 | 1313 | | | 783 | |
| v/s Ratio Prot | | | | | | | c0.22 | 0.09 | | | | |
| v/s Ratio Perm | | c0.04 | | | 0.01 | | c0.43 | | | | 0.37 | |
| v/c Ratio | | 0.44 | | | 0.16 | | 0.81 | 0.12 | | | 0.74 | |
| Uniform Delay, d1 | | 44.0 | | | 43.0 | | 7.9 | 2.2 | | | 20.2 | |
| Progression Factor | | 1.00 | | | 1.00 | | 1.00 | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 3.1 | | | 0.6 | | 6.4 | 0.2 | | | 6.2 | |
| Delay (s) | | 47.1 | | | 43.6 | | 14.4 | 2.3 | | | 26.4 | |
| Level of Service | | D | | | D | | B | A | | | C | |
| Approach Delay (s) | | 47.1 | | | 43.6 | | | 12.0 | | | 26.4 | |
| Approach LOS | | D | | | D | | | B | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 19.8 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.80 | | |
| Actuated Cycle Length (s) | 101.1 | Sum of lost time (s) | 14.4 |
| Intersection Capacity Utilization | 88.6% | 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) | 102 | 11 | 1 | 0 | 9 | 0 | 1 | 0 | 0 | 0 | 0 | 21 |
| Future Volume (Veh/h) | 102 | 11 | 1 | 0 | 9 | 0 | 1 | 0 | 0 | 0 | 0 | 21 |
| 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) | 111 | 12 | 1 | 0 | 10 | 0 | 1 | 0 | 0 | 0 | 0 | 23 |
| 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 | 10 | | | 13 | | | 268 | 244 | 12 | 244 | 245 | 10 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 10 | | | 13 | | | 268 | 244 | 12 | 244 | 245 | 10 |
| 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 % | 93 | | | 100 | | | 100 | 100 | 100 | 100 | 100 | 98 |
| cM capacity (veh/h) | 1610 | | | 1619 | | | 639 | 615 | 1074 | 672 | 615 | 1071 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 124 | 10 | 1 | 23 |
| Volume Left | 111 | 0 | 1 | 0 |
| Volume Right | 1 | 0 | 0 | 23 |
| cSH | 1610 | 1619 | 639 | 1071 |
| Volume to Capacity | 0.07 | 0.00 | 0.00 | 0.02 |
| Queue Length 95th (m) | 1.8 | 0.0 | 0.0 | 0.5 |
| Control Delay (s) | 6.7 | 0.0 | 10.6 | 8.4 |
| Lane LOS | A | | B | A |
| Approach Delay (s) | 6.7 | 0.0 | 10.6 | 8.4 |
| Approach LOS | | | B | A |

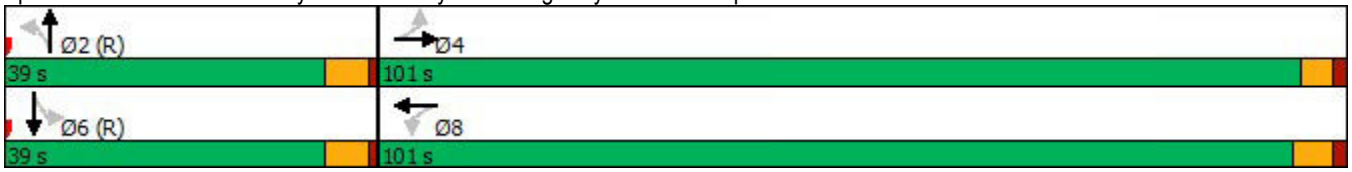
| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 6.5 | | | |
| Intersection Capacity Utilization | 23.5% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |

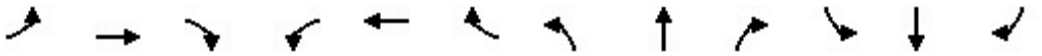
| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Traffic Volume (vph) | 12 | 8 | 651 | 15 | 21 | 268 | 34 | 124 |
| Future Volume (vph) | 12 | 8 | 651 | 15 | 21 | 268 | 34 | 124 |
| Lane Group Flow (vph) | 0 | 49 | 0 | 688 | 0 | 330 | 35 | 134 |
| 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) | 101.0 | 101.0 | 101.0 | 101.0 | 39.0 | 39.0 | 39.0 | 39.0 |
| Total Split (%) | 72.1% | 72.1% | 72.1% | 72.1% | 27.9% | 27.9% | 27.9% | 27.9% |
| 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 | | 0.05 | | 0.83 | | 0.83 | 0.28 | 0.33 |
| Control Delay | | 3.8 | | 27.8 | | 68.8 | 50.7 | 46.2 |
| Queue Delay | | 0.0 | | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Delay | | 3.8 | | 27.8 | | 68.8 | 50.7 | 46.2 |
| Queue Length 50th (m) | | 1.7 | | 137.4 | | 91.1 | 8.4 | 32.0 |
| Queue Length 95th (m) | | 5.9 | | 215.5 | | #142.0 | 19.9 | 52.5 |
| Internal Link Dist (m) | | 592.7 | | 625.0 | | 491.5 | | 559.6 |
| Turn Bay Length (m) | | | | | | | 82.0 | |
| Base Capacity (vph) | | 917 | | 824 | | 396 | 125 | 404 |
| 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 | | 0.05 | | 0.83 | | 0.83 | 0.28 | 0.33 |

## Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
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) | 12 | 8 | 28 | 651 | 15 | 2 | 21 | 268 | 31 | 34 | 124 | 6 |
| Future Volume (vph) | 12 | 8 | 28 | 651 | 15 | 2 | 21 | 268 | 31 | 34 | 124 | 6 |
| 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 | | 0.92 | | | 1.00 | | | 0.99 | | 1.00 | 0.99 | |
| Flt Protected | | 0.99 | | | 0.95 | | | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1520 | | | 1663 | | | 1688 | | 1662 | 1690 | |
| Flt Permitted | | 0.86 | | | 0.70 | | | 0.97 | | 0.30 | 1.00 | |
| Satd. Flow (perm) | | 1323 | | | 1212 | | | 1648 | | 527 | 1690 | |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 12 | 8 | 29 | 671 | 15 | 2 | 22 | 276 | 32 | 35 | 128 | 6 |
| RTOR Reduction (vph) | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 2 | 0 |
| Lane Group Flow (vph) | 0 | 40 | 0 | 0 | 688 | 0 | 0 | 327 | 0 | 35 | 132 | 0 |
| Heavy Vehicles (%) | 0% | 14% | 4% | 0% | 15% | 0% | 5% | 2% | 0% | 0% | 3% | 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) | | 96.1 | | | 95.2 | | | 33.4 | | 33.4 | 33.4 | |
| Effective Green, g (s) | | 96.1 | | | 95.2 | | | 33.4 | | 33.4 | 33.4 | |
| Actuated g/C Ratio | | 0.69 | | | 0.68 | | | 0.24 | | 0.24 | 0.24 | |
| 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) | | 908 | | | 824 | | | 393 | | 125 | 403 | |
| v/s Ratio Prot | | | | | | | | | | | 0.08 | |
| v/s Ratio Perm | | 0.03 | | | c0.57 | | | c0.20 | | 0.07 | | |
| v/c Ratio | | 0.04 | | | 0.83 | | | 0.83 | | 0.28 | 0.33 | |
| Uniform Delay, d1 | | 7.1 | | | 16.6 | | | 50.6 | | 43.5 | 44.0 | |
| Progression Factor | | 1.00 | | | 1.00 | | | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 0.1 | | | 9.8 | | | 18.3 | | 5.5 | 2.2 | |
| Delay (s) | | 7.2 | | | 26.4 | | | 68.9 | | 49.0 | 46.2 | |
| Level of Service | | A | | | C | | | E | | D | D | |
| Approach Delay (s) | | 7.2 | | | 26.4 | | | 68.9 | | | 46.8 | |
| Approach LOS | | A | | | C | | | E | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 39.7 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.83 | | |
| Actuated Cycle Length (s) | 140.0 | Sum of lost time (s) | 11.4 |
| Intersection Capacity Utilization | 92.7% | 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) | 107 | 4 | 18 | 54 | 505 | 174 | 31 | 747 |
| Future Volume (vph) | 107 | 4 | 18 | 54 | 505 | 174 | 31 | 747 |
| Lane Group Flow (vph) | 0 | 177 | 0 | 126 | 574 | 215 | 0 | 908 |
| 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 | 31.0 | 106.4 | 75.4 | 75.4 |
| Total Split (%) | 24.0% | 24.0% | 24.0% | 24.0% | 22.1% | 76.0% | 53.9% | 53.9% |
| 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 | | 0.90 | | 0.43 | 1.05 | 0.17 | | 1.05 |
| Control Delay | | 93.9 | | 47.0 | 73.9 | 5.9 | | 78.5 |
| Queue Delay | | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Total Delay | | 93.9 | | 47.0 | 73.9 | 5.9 | | 78.5 |
| Queue Length 50th (m) | | 46.5 | | 27.5 | ~121.4 | 17.4 | | ~294.6 |
| Queue Length 95th (m) | | #84.7 | | 47.2 | #187.0 | 25.7 | | #363.3 |
| Internal Link Dist (m) | | 658.6 | | 1175.6 | | 599.4 | | 491.5 |
| Turn Bay Length (m) | | | | | 85.0 | | | |
| Base Capacity (vph) | | 221 | | 331 | 548 | 1265 | | 863 |
| 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 | | 0.38 | 1.05 | 0.17 | | 1.05 |

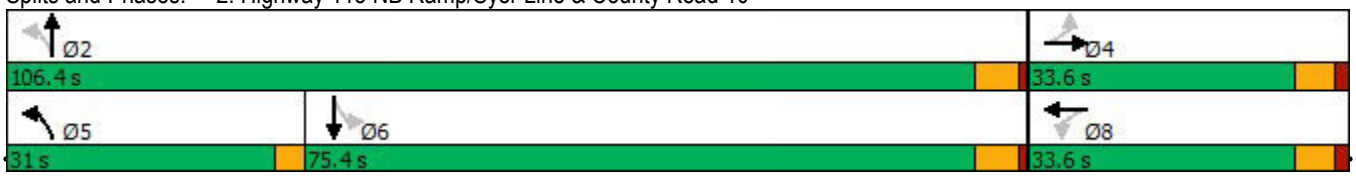
Intersection Summary

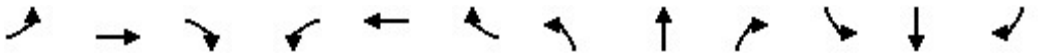
Cycle Length: 140
Actuated Cycle Length: 136.8
Natural Cycle: 150
Control Type: Semi Act-Uncoord

~ 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.

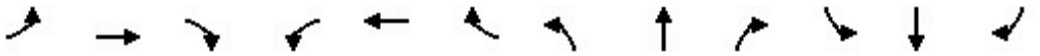
Splits and Phases: 2: Highway 115 NB Ramp/Syer Line & County Road 10





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 107 | 4 | 44 | 18 | 54 | 40 | 505 | 174 | 15 | 31 | 747 | 21 |
| Future Volume (vph) | 107 | 4 | 44 | 18 | 54 | 40 | 505 | 174 | 15 | 31 | 747 | 21 |
| 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 | | | 1.00 | |
| Flt Protected | | 0.97 | | | 0.99 | | 0.95 | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | 1594 | | | 1653 | | 1646 | 1713 | | | 1722 | |
| Flt Permitted | | 0.63 | | | 0.94 | | 0.22 | 1.00 | | | 0.98 | |
| Satd. Flow (perm) | | 1035 | | | 1560 | | 384 | 1713 | | | 1691 | |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Adj. Flow (vph) | 122 | 5 | 50 | 20 | 61 | 45 | 574 | 198 | 17 | 35 | 849 | 24 |
| RTOR Reduction (vph) | 0 | 11 | 0 | 0 | 15 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 166 | 0 | 0 | 111 | 0 | 574 | 213 | 0 | 0 | 908 | 0 |
| Heavy Vehicles (%) | 3% | 0% | 0% | 0% | 0% | 0% | 1% | 1% | 0% | 0% | 1% | 5% |
| 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) | | 24.5 | | | 24.5 | | 100.9 | 100.9 | | | 69.9 | |
| Effective Green, g (s) | | 24.5 | | | 24.5 | | 100.9 | 100.9 | | | 69.9 | |
| Actuated g/C Ratio | | 0.18 | | | 0.18 | | 0.74 | 0.74 | | | 0.51 | |
| 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) | | 185 | | | 279 | | 541 | 1263 | | | 864 | |
| v/s Ratio Prot | | | | | | | c0.22 | 0.12 | | | | |
| v/s Ratio Perm | | c0.16 | | | 0.07 | | c0.57 | | | | 0.54 | |
| v/c Ratio | | 0.90 | | | 0.40 | | 1.06 | 0.17 | | | 1.05 | |
| Uniform Delay, d1 | | 54.9 | | | 49.6 | | 27.8 | 5.4 | | | 33.5 | |
| Progression Factor | | 1.00 | | | 1.00 | | 1.00 | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 38.6 | | | 0.9 | | 55.9 | 0.3 | | | 44.7 | |
| Delay (s) | | 93.5 | | | 50.6 | | 83.6 | 5.7 | | | 78.1 | |
| Level of Service | | F | | | D | | F | A | | | E | |
| Approach Delay (s) | | 93.5 | | | 50.6 | | | 62.4 | | | 78.1 | |
| Approach LOS | | F | | | D | | | E | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 71.6 | HCM 2000 Level of Service | E |
| HCM 2000 Volume to Capacity ratio | 1.05 | | |
| Actuated Cycle Length (s) | 136.8 | Sum of lost time (s) | 14.4 |
| Intersection Capacity Utilization | 106.7% | 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) | 25 | 24 | 1 | 0 | 23 | 0 | 1 | 0 | 0 | 0 | 0 | 87 |
| Future Volume (Veh/h) | 25 | 24 | 1 | 0 | 23 | 0 | 1 | 0 | 0 | 0 | 0 | 87 |
| 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) | 27 | 26 | 1 | 0 | 25 | 0 | 1 | 0 | 0 | 0 | 0 | 95 |
| 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 | 25 | | | 27 | | | 200 | 106 | 26 | 106 | 106 | 25 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 25 | | | 27 | | | 200 | 106 | 26 | 106 | 106 | 25 |
| 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 % | 98 | | | 100 | | | 100 | 100 | 100 | 100 | 100 | 91 |
| cM capacity (veh/h) | 1589 | | | 1600 | | | 684 | 775 | 1055 | 863 | 774 | 1051 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 54 | 25 | 1 | 95 |
| Volume Left | 27 | 0 | 1 | 0 |
| Volume Right | 1 | 0 | 0 | 95 |
| cSH | 1589 | 1600 | 684 | 1051 |
| Volume to Capacity | 0.02 | 0.00 | 0.00 | 0.09 |
| Queue Length 95th (m) | 0.4 | 0.0 | 0.0 | 2.4 |
| Control Delay (s) | 3.7 | 0.0 | 10.3 | 8.8 |
| Lane LOS | A | | B | A |
| Approach Delay (s) | 3.7 | 0.0 | 10.3 | 8.8 |
| Approach LOS | | | B | A |

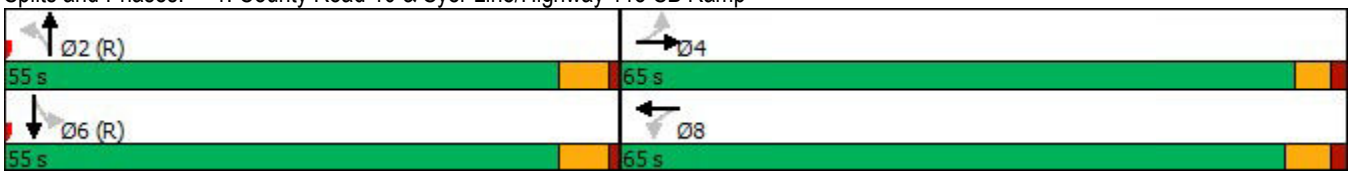
| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 6.0 | | | |
| Intersection Capacity Utilization | 22.1% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |

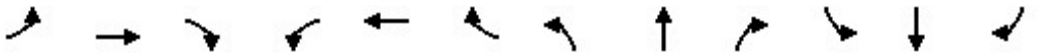
| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Traffic Volume (vph) | 9 | 6 | 412 | 5 | 17 | 117 | 74 | 132 |
| Future Volume (vph) | 9 | 6 | 412 | 5 | 17 | 117 | 74 | 132 |
| Lane Group Flow (vph) | 0 | 46 | 438 | 16 | 0 | 198 | 79 | 147 |
| 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 | | 0.06 | 0.73 | 0.03 | | 0.31 | 0.18 | 0.21 |
| Control Delay | | 7.9 | 33.1 | 9.5 | | 22.9 | 24.0 | 23.2 |
| Queue Delay | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Delay | | 7.9 | 33.1 | 9.5 | | 22.9 | 24.0 | 23.2 |
| Queue Length 50th (m) | | 1.9 | 83.7 | 0.6 | | 29.1 | 12.3 | 22.6 |
| Queue Length 95th (m) | | 8.3 | 128.5 | 4.5 | | 48.3 | 23.8 | 37.6 |
| Internal Link Dist (m) | | 592.7 | | 625.0 | | 491.5 | | 559.6 |
| Turn Bay Length (m) | | | 100.0 | | | | 82.0 | |
| Base Capacity (vph) | | 728 | 597 | 625 | | 636 | 430 | 710 |
| 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 | | 0.06 | 0.73 | 0.03 | | 0.31 | 0.18 | 0.21 |

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





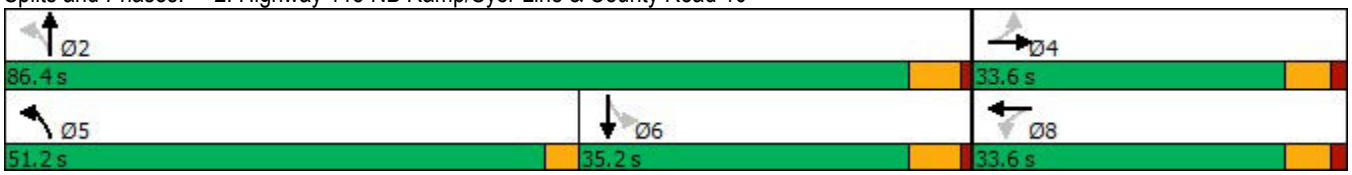
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 9 | 6 | 28 | 412 | 5 | 10 | 17 | 117 | 53 | 74 | 132 | 7 |
| Future Volume (vph) | 9 | 6 | 28 | 412 | 5 | 10 | 17 | 117 | 53 | 74 | 132 | 7 |
| 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 | | 0.91 | | 1.00 | 0.90 | | | 0.96 | | 1.00 | 0.99 | |
| Flt Protected | | 0.99 | | 0.95 | 1.00 | | | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1458 | | 1583 | 1256 | | | 1557 | | 1662 | 1721 | |
| Flt Permitted | | 0.97 | | 0.73 | 1.00 | | | 0.97 | | 0.60 | 1.00 | |
| Satd. Flow (perm) | | 1423 | | 1212 | 1256 | | | 1517 | | 1046 | 1721 | |
| Peak-hour factor, PHF | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Adj. Flow (vph) | 10 | 6 | 30 | 438 | 5 | 11 | 18 | 124 | 56 | 79 | 140 | 7 |
| RTOR Reduction (vph) | 0 | 15 | 0 | 0 | 6 | 0 | 0 | 12 | 0 | 0 | 2 | 0 |
| Lane Group Flow (vph) | 0 | 31 | 0 | 438 | 10 | 0 | 0 | 186 | 0 | 79 | 145 | 0 |
| Heavy Vehicles (%) | 14% | 20% | 4% | 5% | 25% | 25% | 8% | 11% | 0% | 0% | 1% | 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) | | 712 | | 597 | 619 | | | 624 | | 430 | 708 | |
| v/s Ratio Prot | | | | | 0.01 | | | | | | 0.08 | |
| v/s Ratio Perm | | 0.02 | | c0.36 | | | | c0.12 | | 0.08 | | |
| v/c Ratio | | 0.04 | | 0.73 | 0.02 | | | 0.30 | | 0.18 | 0.21 | |
| Uniform Delay, d1 | | 15.3 | | 24.1 | 15.5 | | | 23.7 | | 22.5 | 22.7 | |
| Progression Factor | | 1.00 | | 1.00 | 1.00 | | | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 0.1 | | 7.8 | 0.0 | | | 1.2 | | 0.9 | 0.7 | |
| Delay (s) | | 15.4 | | 31.9 | 15.6 | | | 24.9 | | 23.4 | 23.3 | |
| Level of Service | | B | | C | B | | | C | | C | C | |
| Approach Delay (s) | | 15.4 | | | 31.4 | | | 24.9 | | | 23.4 | |
| Approach LOS | | B | | | C | | | C | | | C | |

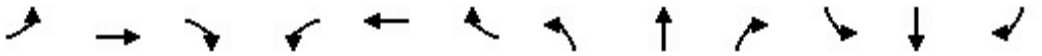
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 27.2 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.53 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 11.4 |
| Intersection Capacity Utilization | 69.2% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Traffic Volume (vph) | 31 | 11 | 5 | 12 | 644 | 142 | 90 | 459 |
| Future Volume (vph) | 31 | 11 | 5 | 12 | 644 | 142 | 90 | 459 |
| Lane Group Flow (vph) | 34 | 26 | 0 | 33 | 700 | 169 | 0 | 618 |
| 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 | 51.2 | 86.4 | 35.2 | 35.2 |
| Total Split (%) | 28.0% | 28.0% | 28.0% | 28.0% | 42.7% | 72.0% | 29.3% | 29.3% |
| 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 | | 0.0 |
| Total Lost Time (s) | 5.8 | 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 | 0.30 | 0.16 | | 0.20 | 0.81 | 0.12 | | 0.54 |
| Control Delay | 50.2 | 28.8 | | 30.5 | 16.9 | 2.6 | | 29.0 |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Total Delay | 50.2 | 28.8 | | 30.5 | 16.9 | 2.6 | | 29.0 |
| Queue Length 50th (m) | 6.7 | 2.3 | | 3.5 | 61.5 | 6.1 | | 54.8 |
| Queue Length 95th (m) | 16.8 | 10.8 | | 12.8 | 115.5 | 12.2 | | 85.8 |
| Internal Link Dist (m) | | 658.6 | | 1175.6 | | 599.4 | | 491.5 |
| Turn Bay Length (m) | 100.0 | | | | 85.0 | | | |
| Base Capacity (vph) | 298 | 407 | | 416 | 984 | 1358 | | 1145 |
| 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 | 0.11 | 0.06 | | 0.08 | 0.71 | 0.12 | | 0.54 |

| Intersection Summary |
|---|
| Cycle Length: 120 |
| Actuated Cycle Length: 99.6 |
| Natural Cycle: 100 |
| Control Type: Semi Act-Uncoord |

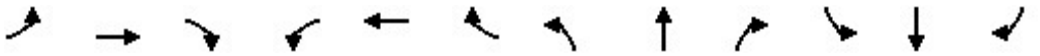
Splits and Phases: 2: Highway 115 NB Ramp/Syer Line & County Road 10





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 31 | 11 | 13 | 5 | 12 | 14 | 644 | 142 | 14 | 90 | 459 | 19 |
| Future Volume (vph) | 31 | 11 | 13 | 5 | 12 | 14 | 644 | 142 | 14 | 90 | 459 | 19 |
| Ideal Flow (vphpl) | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 |
| Total Lost time (s) | 5.8 | 5.8 | | | 5.8 | | 3.0 | 5.6 | | | 5.6 | |
| Lane Util. Factor | 1.00 | 1.00 | | | 1.00 | | 1.00 | 1.00 | | | 0.95 | |
| Frt | 1.00 | 0.92 | | | 0.94 | | 1.00 | 0.99 | | | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | | 0.99 | | 0.95 | 1.00 | | | 0.99 | |
| Satd. Flow (prot) | 1374 | 1418 | | | 1515 | | 1630 | 1637 | | | 3248 | |
| Flt Permitted | 0.74 | 1.00 | | | 0.95 | | 0.31 | 1.00 | | | 0.86 | |
| Satd. Flow (perm) | 1064 | 1418 | | | 1444 | | 540 | 1637 | | | 2813 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 34 | 12 | 14 | 5 | 13 | 15 | 700 | 154 | 15 | 98 | 499 | 21 |
| RTOR Reduction (vph) | 0 | 13 | 0 | 0 | 14 | 0 | 0 | 2 | 0 | 0 | 2 | 0 |
| Lane Group Flow (vph) | 34 | 13 | 0 | 0 | 19 | 0 | 700 | 167 | 0 | 0 | 616 | 0 |
| Heavy Vehicles (%) | 21% | 0% | 25% | 50% | 0% | 0% | 2% | 6% | 0% | 0% | 1% | 7% |
| 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 | | | 8.3 | | 81.2 | 81.2 | | | 40.5 | |
| Effective Green, g (s) | 8.3 | 8.3 | | | 8.3 | | 81.2 | 81.2 | | | 40.5 | |
| Actuated g/C Ratio | 0.08 | 0.08 | | | 0.08 | | 0.80 | 0.80 | | | 0.40 | |
| Clearance Time (s) | 5.8 | 5.8 | | | 5.8 | | 3.0 | 5.6 | | | 5.6 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | | 3.0 | | 3.0 | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | 87 | 116 | | | 118 | | 841 | 1317 | | | 1129 | |
| v/s Ratio Prot | | 0.01 | | | | | c0.31 | 0.10 | | | | |
| v/s Ratio Perm | c0.03 | | | | 0.01 | | c0.36 | | | | 0.22 | |
| v/c Ratio | 0.39 | 0.11 | | | 0.16 | | 0.83 | 0.13 | | | 0.55 | |
| Uniform Delay, d1 | 43.9 | 42.9 | | | 43.1 | | 11.1 | 2.1 | | | 23.1 | |
| Progression Factor | 1.00 | 1.00 | | | 1.00 | | 1.00 | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | 2.9 | 0.4 | | | 0.7 | | 7.1 | 0.2 | | | 1.9 | |
| Delay (s) | 46.8 | 43.3 | | | 43.7 | | 18.1 | 2.3 | | | 25.0 | |
| Level of Service | D | D | | | D | | B | A | | | C | |
| Approach Delay (s) | | 45.3 | | | 43.7 | | | 15.1 | | | 25.0 | |
| Approach LOS | | D | | | D | | | B | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 20.7 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.81 | | |
| Actuated Cycle Length (s) | 100.9 | Sum of lost time (s) | 14.4 |
| Intersection Capacity Utilization | 78.5% | 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) | 102 | 12 | 1 | 0 | 10 | 0 | 1 | 0 | 0 | 0 | 0 | 21 |
| Future Volume (Veh/h) | 102 | 12 | 1 | 0 | 10 | 0 | 1 | 0 | 0 | 0 | 0 | 21 |
| 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) | 111 | 13 | 1 | 0 | 11 | 0 | 1 | 0 | 0 | 0 | 0 | 23 |
| 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 | 11 | | | 14 | | | 270 | 246 | 14 | 246 | 247 | 11 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 11 | | | 14 | | | 270 | 246 | 14 | 246 | 247 | 11 |
| 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 % | 93 | | | 100 | | | 100 | 100 | 100 | 100 | 100 | 98 |
| cM capacity (veh/h) | 1608 | | | 1617 | | | 637 | 614 | 1072 | 670 | 613 | 1070 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 125 | 11 | 1 | 23 |
| Volume Left | 111 | 0 | 1 | 0 |
| Volume Right | 1 | 0 | 0 | 23 |
| cSH | 1608 | 1617 | 637 | 1070 |
| Volume to Capacity | 0.07 | 0.00 | 0.00 | 0.02 |
| Queue Length 95th (m) | 1.8 | 0.0 | 0.0 | 0.5 |
| Control Delay (s) | 6.6 | 0.0 | 10.7 | 8.4 |
| Lane LOS | A | | B | A |
| Approach Delay (s) | 6.6 | 0.0 | 10.7 | 8.4 |
| Approach LOS | | | B | A |

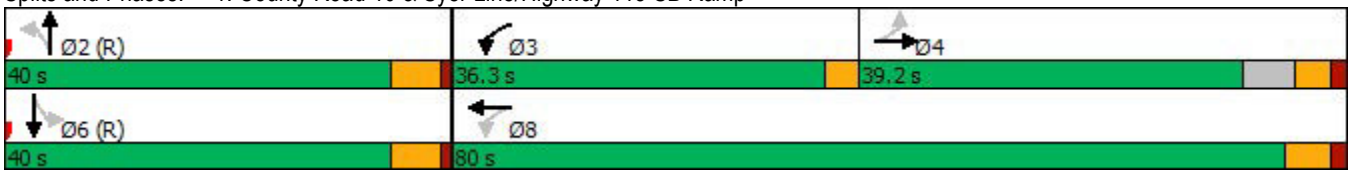
| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 6.5 | | | |
| Intersection Capacity Utilization | 23.6% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |

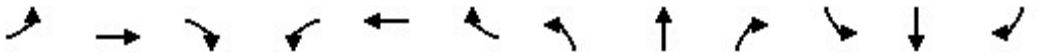
| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Traffic Volume (vph) | 13 | 9 | 711 | 16 | 23 | 293 | 39 | 142 |
| Future Volume (vph) | 13 | 9 | 711 | 16 | 23 | 293 | 39 | 142 |
| Lane Group Flow (vph) | 0 | 53 | 733 | 20 | 0 | 360 | 40 | 152 |
| 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 | 80.0 | 40.0 | 40.0 | 40.0 | 40.0 |
| Total Split (%) | 32.7% | 32.7% | 30.3% | 66.7% | 33.3% | 33.3% | 33.3% | 33.3% |
| 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 | | 0.10 | 0.80 | 0.02 | | 0.76 | 0.23 | 0.31 |
| Control Delay | | 15.4 | 22.2 | 7.7 | | 50.3 | 37.1 | 35.3 |
| Queue Delay | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Delay | | 15.4 | 22.2 | 7.7 | | 50.3 | 37.1 | 35.3 |
| Queue Length 50th (m) | | 3.8 | 107.9 | 1.4 | | 80.5 | 7.6 | 29.1 |
| Queue Length 95th (m) | | 13.4 | 153.6 | 4.6 | | #119.3 | 18.0 | 48.3 |
| Internal Link Dist (m) | | 592.7 | | 625.0 | | 491.5 | | 559.6 |
| Turn Bay Length (m) | | | 100.0 | | | | 82.0 | |
| Base Capacity (vph) | | 511 | 920 | 938 | | 474 | 173 | 486 |
| 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 | | 0.10 | 0.80 | 0.02 | | 0.76 | 0.23 | 0.31 |

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) | 13 | 9 | 30 | 711 | 16 | 4 | 23 | 293 | 33 | 39 | 142 | 6 |
| Future Volume (vph) | 13 | 9 | 30 | 711 | 16 | 4 | 23 | 293 | 33 | 39 | 142 | 6 |
| 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 | | 0.92 | | 1.00 | 0.97 | | | 0.99 | | 1.00 | 0.99 | |
| Flt Protected | | 0.99 | | 0.95 | 1.00 | | | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1521 | | 1662 | 1516 | | | 1688 | | 1662 | 1691 | |
| Flt Permitted | | 0.95 | | 0.72 | 1.00 | | | 0.97 | | 0.35 | 1.00 | |
| Satd. Flow (perm) | | 1467 | | 1262 | 1516 | | | 1648 | | 605 | 1691 | |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 13 | 9 | 31 | 733 | 16 | 4 | 24 | 302 | 34 | 40 | 146 | 6 |
| RTOR Reduction (vph) | 0 | 21 | 0 | 0 | 2 | 0 | 0 | 3 | 0 | 0 | 1 | 0 |
| Lane Group Flow (vph) | 0 | 32 | 0 | 733 | 18 | 0 | 0 | 357 | 0 | 40 | 151 | 0 |
| Heavy Vehicles (%) | 0% | 14% | 4% | 0% | 15% | 0% | 5% | 2% | 0% | 0% | 3% | 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) | | 40.2 | | 74.2 | 74.2 | | | 34.4 | | 34.4 | 34.4 | |
| Effective Green, g (s) | | 40.2 | | 74.2 | 74.2 | | | 34.4 | | 34.4 | 34.4 | |
| Actuated g/C Ratio | | 0.34 | | 0.62 | 0.62 | | | 0.29 | | 0.29 | 0.29 | |
| 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) | | 491 | | 886 | 937 | | | 472 | | 173 | 484 | |
| v/s Ratio Prot | | | | c0.22 | 0.01 | | | | | | 0.09 | |
| v/s Ratio Perm | | 0.02 | | c0.29 | | | | c0.22 | | 0.07 | | |
| v/c Ratio | | 0.07 | | 0.83 | 0.02 | | | 0.76 | | 0.23 | 0.31 | |
| Uniform Delay, d1 | | 27.1 | | 16.1 | 8.8 | | | 39.0 | | 32.7 | 33.5 | |
| Progression Factor | | 1.00 | | 1.00 | 1.00 | | | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 0.3 | | 6.4 | 0.0 | | | 10.8 | | 3.1 | 1.7 | |
| Delay (s) | | 27.4 | | 22.5 | 8.9 | | | 49.8 | | 35.8 | 35.2 | |
| Level of Service | | C | | C | A | | | D | | D | D | |
| Approach Delay (s) | | 27.4 | | | 22.1 | | | 49.8 | | | 35.3 | |
| Approach LOS | | C | | | C | | | D | | | D | |

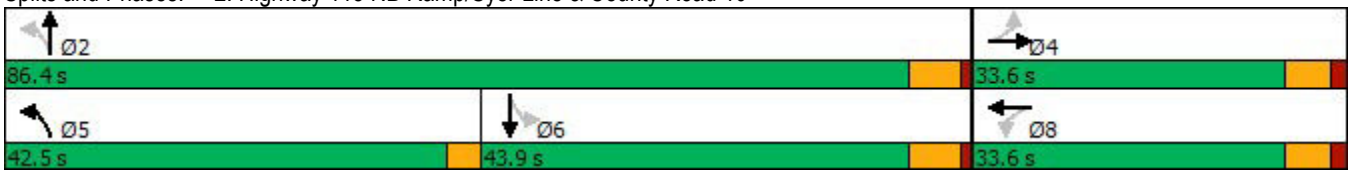
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 31.5 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.82 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 98.7% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

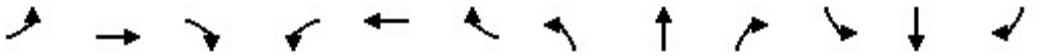
| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Traffic Volume (vph) | 120 | 5 | 18 | 55 | 544 | 191 | 32 | 817 |
| Future Volume (vph) | 120 | 5 | 18 | 55 | 544 | 191 | 32 | 817 |
| Lane Group Flow (vph) | 136 | 62 | 0 | 130 | 618 | 235 | 0 | 996 |
| 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 | 42.5 | 86.4 | 43.9 | 43.9 |
| Total Split (%) | 28.0% | 28.0% | 28.0% | 28.0% | 35.4% | 72.0% | 36.6% | 36.6% |
| 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 | | 0.0 |
| Total Lost Time (s) | 5.8 | 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 | 0.80 | 0.20 | | 0.45 | 0.95 | 0.19 | | 0.95 |
| Control Delay | 75.0 | 13.2 | | 38.6 | 54.5 | 5.9 | | 54.3 |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Total Delay | 75.0 | 13.2 | | 38.6 | 54.5 | 5.9 | | 54.3 |
| Queue Length 50th (m) | 30.2 | 1.2 | | 22.2 | 119.4 | 14.5 | | 116.1 |
| Queue Length 95th (m) | 51.6 | 12.2 | | 39.9 | #211.4 | 29.1 | | #173.5 |
| Internal Link Dist (m) | | 658.6 | | 1175.6 | | 599.4 | | 491.5 |
| Turn Bay Length (m) | 100.0 | | | | 85.0 | | | |
| Base Capacity (vph) | 249 | 419 | | 410 | 650 | 1247 | | 1052 |
| 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 | 0.55 | 0.15 | | 0.32 | 0.95 | 0.19 | | 0.95 |

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 111.6
Natural Cycle: 130
Control Type: Semi Act-Uncoord
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

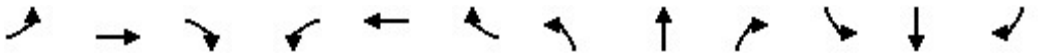
Splits and Phases: 2: Highway 115 NB Ramp/Syer Line & County Road 10





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 120 | 5 | 49 | 18 | 55 | 41 | 544 | 191 | 16 | 32 | 817 | 28 |
| Future Volume (vph) | 120 | 5 | 49 | 18 | 55 | 41 | 544 | 191 | 16 | 32 | 817 | 28 |
| Ideal Flow (vphpl) | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 |
| Total Lost time (s) | 5.8 | 5.8 | | | 5.8 | | 3.0 | 5.6 | | | 5.6 | |
| Lane Util. Factor | 1.00 | 1.00 | | | 1.00 | | 1.00 | 1.00 | | | 0.95 | |
| Frt | 1.00 | 0.86 | | | 0.95 | | 1.00 | 0.99 | | | 1.00 | |
| Flt Protected | 0.95 | 1.00 | | | 0.99 | | 0.95 | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1614 | 1513 | | | 1652 | | 1646 | 1714 | | | 3267 | |
| Flt Permitted | 0.59 | 1.00 | | | 0.95 | | 0.10 | 1.00 | | | 0.93 | |
| Satd. Flow (perm) | 999 | 1513 | | | 1578 | | 168 | 1714 | | | 3053 | |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Adj. Flow (vph) | 136 | 6 | 56 | 20 | 62 | 47 | 618 | 217 | 18 | 36 | 928 | 32 |
| RTOR Reduction (vph) | 0 | 46 | 0 | 0 | 18 | 0 | 0 | 2 | 0 | 0 | 2 | 0 |
| Lane Group Flow (vph) | 136 | 16 | 0 | 0 | 112 | 0 | 618 | 233 | 0 | 0 | 994 | 0 |
| Heavy Vehicles (%) | 3% | 0% | 0% | 0% | 0% | 0% | 1% | 1% | 0% | 0% | 1% | 5% |
| 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) | 19.2 | 19.2 | | | 19.2 | | 81.0 | 81.0 | | | 38.4 | |
| Effective Green, g (s) | 19.2 | 19.2 | | | 19.2 | | 81.0 | 81.0 | | | 38.4 | |
| Actuated g/C Ratio | 0.17 | 0.17 | | | 0.17 | | 0.73 | 0.73 | | | 0.34 | |
| Clearance Time (s) | 5.8 | 5.8 | | | 5.8 | | 3.0 | 5.6 | | | 5.6 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | | 3.0 | | 3.0 | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | 171 | 260 | | | 271 | | 646 | 1244 | | | 1050 | |
| v/s Ratio Prot | | 0.01 | | | | | c0.34 | 0.14 | | | | |
| v/s Ratio Perm | c0.14 | | | | 0.07 | | c0.36 | | | | 0.33 | |
| v/c Ratio | 0.80 | 0.06 | | | 0.41 | | 0.96 | 0.19 | | | 0.95 | |
| Uniform Delay, d1 | 44.3 | 38.7 | | | 41.2 | | 29.4 | 4.9 | | | 35.6 | |
| Progression Factor | 1.00 | 1.00 | | | 1.00 | | 1.00 | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | 22.0 | 0.1 | | | 1.0 | | 24.9 | 0.3 | | | 17.6 | |
| Delay (s) | 66.3 | 38.7 | | | 42.2 | | 54.3 | 5.2 | | | 53.2 | |
| Level of Service | E | D | | | D | | D | A | | | D | |
| Approach Delay (s) | | 57.7 | | | 42.2 | | | 40.7 | | | 53.2 | |
| Approach LOS | | E | | | D | | | D | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 48.1 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.95 | | |
| Actuated Cycle Length (s) | 111.6 | Sum of lost time (s) | 14.4 |
| Intersection Capacity Utilization | 87.3% | 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) | 25 | 27 | 1 | 0 | 26 | 0 | 1 | 0 | 0 | 0 | 0 | 87 |
| Future Volume (Veh/h) | 25 | 27 | 1 | 0 | 26 | 0 | 1 | 0 | 0 | 0 | 0 | 87 |
| 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) | 27 | 29 | 1 | 0 | 28 | 0 | 1 | 0 | 0 | 0 | 0 | 95 |
| 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 | 28 | | | 30 | | | 206 | 112 | 30 | 112 | 112 | 28 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 28 | | | 30 | | | 206 | 112 | 30 | 112 | 112 | 28 |
| 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 % | 98 | | | 100 | | | 100 | 100 | 100 | 100 | 100 | 91 |
| cM capacity (veh/h) | 1585 | | | 1596 | | | 678 | 769 | 1051 | 855 | 769 | 1047 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 57 | 28 | 1 | 95 |
| Volume Left | 27 | 0 | 1 | 0 |
| Volume Right | 1 | 0 | 0 | 95 |
| cSH | 1585 | 1596 | 678 | 1047 |
| Volume to Capacity | 0.02 | 0.00 | 0.00 | 0.09 |
| Queue Length 95th (m) | 0.4 | 0.0 | 0.0 | 2.4 |
| Control Delay (s) | 3.5 | 0.0 | 10.3 | 8.8 |
| Lane LOS | A | | B | A |
| Approach Delay (s) | 3.5 | 0.0 | 10.3 | 8.8 |
| Approach LOS | | | B | A |

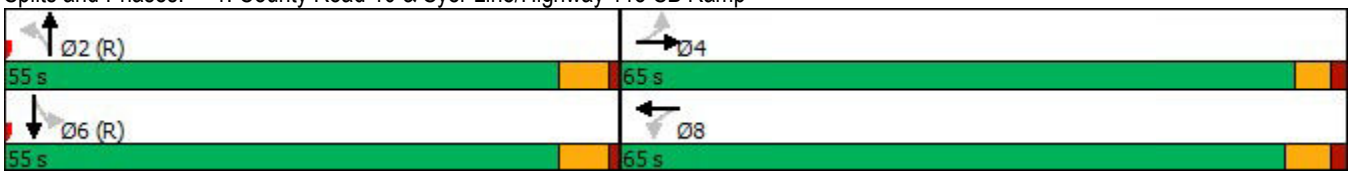
| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 5.8 | | | |
| Intersection Capacity Utilization | 22.3% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |

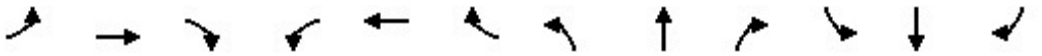
| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Traffic Volume (vph) | 9 | 7 | 434 | 6 | 19 | 132 | 83 | 145 |
| Future Volume (vph) | 9 | 7 | 434 | 6 | 19 | 132 | 83 | 145 |
| Lane Group Flow (vph) | 0 | 50 | 462 | 27 | 0 | 221 | 88 | 163 |
| 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 | 0.78 | 0.04 | | 0.35 | 0.21 | 0.23 |
| Control Delay | | 7.7 | 35.8 | 7.7 | | 23.9 | 24.6 | 23.6 |
| Queue Delay | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Delay | | 7.7 | 35.8 | 7.7 | | 23.9 | 24.6 | 23.6 |
| Queue Length 50th (m) | | 2.1 | 91.2 | 0.7 | | 33.7 | 13.8 | 25.4 |
| Queue Length 95th (m) | | 8.8 | 140.6 | 5.8 | | 54.5 | 26.5 | 41.5 |
| Internal Link Dist (m) | | 592.7 | | 625.0 | | 491.5 | | 559.6 |
| Turn Bay Length (m) | | | 100.0 | | | | 82.0 | |
| Base Capacity (vph) | | 729 | 595 | 620 | | 634 | 413 | 709 |
| 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 | 0.78 | 0.04 | | 0.35 | 0.21 | 0.23 |

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) | 9 | 7 | 31 | 434 | 6 | 20 | 19 | 132 | 57 | 83 | 145 | 8 |
| Future Volume (vph) | 9 | 7 | 31 | 434 | 6 | 20 | 19 | 132 | 57 | 83 | 145 | 8 |
| 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 | | 0.91 | | 1.00 | 0.88 | | | 0.96 | | 1.00 | 0.99 | |
| Flt Protected | | 0.99 | | 0.95 | 1.00 | | | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1458 | | 1583 | 1237 | | | 1557 | | 1662 | 1719 | |
| Flt Permitted | | 0.97 | | 0.72 | 1.00 | | | 0.97 | | 0.57 | 1.00 | |
| Satd. Flow (perm) | | 1424 | | 1207 | 1237 | | | 1514 | | 1005 | 1719 | |
| Peak-hour factor, PHF | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Adj. Flow (vph) | 10 | 7 | 33 | 462 | 6 | 21 | 20 | 140 | 61 | 88 | 154 | 9 |
| RTOR Reduction (vph) | 0 | 16 | 0 | 0 | 11 | 0 | 0 | 11 | 0 | 0 | 2 | 0 |
| Lane Group Flow (vph) | 0 | 34 | 0 | 462 | 16 | 0 | 0 | 210 | 0 | 88 | 161 | 0 |
| Heavy Vehicles (%) | 14% | 20% | 4% | 5% | 25% | 25% | 8% | 11% | 0% | 0% | 1% | 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) | | 713 | | 595 | 610 | | | 623 | | 413 | 707 | |
| v/s Ratio Prot | | | | | 0.01 | | | | | | 0.09 | |
| v/s Ratio Perm | | 0.02 | | c0.38 | | | | c0.14 | | 0.09 | | |
| v/c Ratio | | 0.05 | | 0.78 | 0.03 | | | 0.34 | | 0.21 | 0.23 | |
| Uniform Delay, d1 | | 15.3 | | 25.0 | 15.6 | | | 24.1 | | 22.8 | 22.9 | |
| Progression Factor | | 1.00 | | 1.00 | 1.00 | | | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 0.1 | | 9.6 | 0.1 | | | 1.5 | | 1.2 | 0.8 | |
| Delay (s) | | 15.4 | | 34.6 | 15.7 | | | 25.6 | | 23.9 | 23.7 | |
| Level of Service | | B | | C | B | | | C | | C | C | |
| Approach Delay (s) | | 15.4 | | | 33.5 | | | 25.6 | | | 23.8 | |
| Approach LOS | | B | | | C | | | C | | | C | |

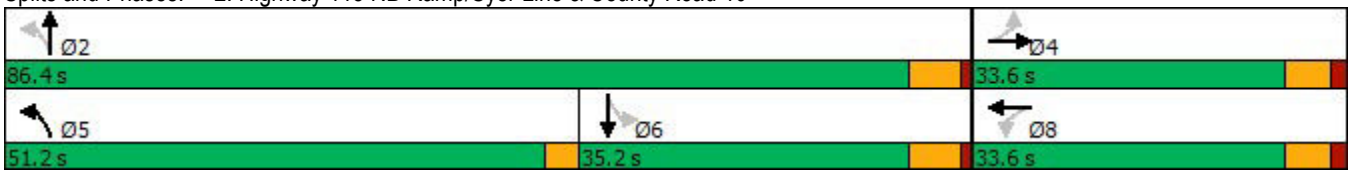
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 28.5 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.58 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 11.4 |
| Intersection Capacity Utilization | 73.9% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

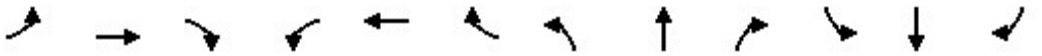
| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Traffic Volume (vph) | 37 | 12 | 6 | 13 | 670 | 155 | 98 | 482 |
| Future Volume (vph) | 37 | 12 | 6 | 13 | 670 | 155 | 98 | 482 |
| Lane Group Flow (vph) | 40 | 28 | 0 | 38 | 728 | 184 | 0 | 656 |
| 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 | 51.2 | 86.4 | 35.2 | 35.2 |
| Total Split (%) | 28.0% | 28.0% | 28.0% | 28.0% | 42.7% | 72.0% | 29.3% | 29.3% |
| 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 | | 0.0 |
| Total Lost Time (s) | 5.8 | 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 | 0.35 | 0.17 | | 0.23 | 0.82 | 0.14 | | 0.68 |
| Control Delay | 51.6 | 28.3 | | 30.9 | 20.4 | 2.8 | | 35.7 |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Total Delay | 51.6 | 28.3 | | 30.9 | 20.4 | 2.8 | | 35.7 |
| Queue Length 50th (m) | 8.0 | 2.5 | | 4.1 | 77.3 | 6.7 | | 66.5 |
| Queue Length 95th (m) | 19.1 | 11.2 | | 14.1 | 147.2 | 13.9 | | #100.2 |
| Internal Link Dist (m) | | 658.6 | | 1175.6 | | 599.4 | | 491.5 |
| Turn Bay Length (m) | 100.0 | | | | 85.0 | | | |
| Base Capacity (vph) | 296 | 408 | | 405 | 948 | 1354 | | 960 |
| 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 | 0.14 | 0.07 | | 0.09 | 0.77 | 0.14 | | 0.68 |

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 99.9
Natural Cycle: 110
Control Type: Semi Act-Uncoord
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

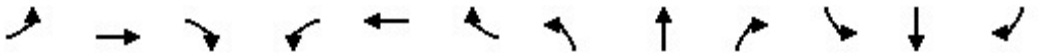
Splits and Phases: 2: Highway 115 NB Ramp/Syer Line & County Road 10





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 37 | 12 | 14 | 6 | 13 | 16 | 670 | 155 | 15 | 98 | 482 | 23 |
| Future Volume (vph) | 37 | 12 | 14 | 6 | 13 | 16 | 670 | 155 | 15 | 98 | 482 | 23 |
| Ideal Flow (vphpl) | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 |
| Total Lost time (s) | 5.8 | 5.8 | | | 5.8 | | 3.0 | 5.6 | | | 5.6 | |
| Lane Util. Factor | 1.00 | 1.00 | | | 1.00 | | 1.00 | 1.00 | | | 0.95 | |
| Frt | 1.00 | 0.92 | | | 0.94 | | 1.00 | 0.99 | | | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | | 0.99 | | 0.95 | 1.00 | | | 0.99 | |
| Satd. Flow (prot) | 1374 | 1419 | | | 1492 | | 1630 | 1637 | | | 3245 | |
| Flt Permitted | 0.73 | 1.00 | | | 0.93 | | 0.26 | 1.00 | | | 0.85 | |
| Satd. Flow (perm) | 1059 | 1419 | | | 1405 | | 446 | 1637 | | | 2786 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 40 | 13 | 15 | 7 | 14 | 17 | 728 | 168 | 16 | 107 | 524 | 25 |
| RTOR Reduction (vph) | 0 | 14 | 0 | 0 | 16 | 0 | 0 | 2 | 0 | 0 | 2 | 0 |
| Lane Group Flow (vph) | 40 | 14 | 0 | 0 | 22 | 0 | 728 | 182 | 0 | 0 | 654 | 0 |
| Heavy Vehicles (%) | 21% | 0% | 25% | 50% | 0% | 0% | 2% | 6% | 0% | 0% | 1% | 7% |
| 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) | 8.6 | 8.6 | | | 8.6 | | 81.2 | 81.2 | | | 34.4 | |
| Effective Green, g (s) | 8.6 | 8.6 | | | 8.6 | | 81.2 | 81.2 | | | 34.4 | |
| Actuated g/C Ratio | 0.08 | 0.08 | | | 0.08 | | 0.80 | 0.80 | | | 0.34 | |
| Clearance Time (s) | 5.8 | 5.8 | | | 5.8 | | 3.0 | 5.6 | | | 5.6 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | | 3.0 | | 3.0 | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | 89 | 120 | | | 119 | | 870 | 1313 | | | 947 | |
| v/s Ratio Prot | | 0.01 | | | | | c0.36 | 0.11 | | | | |
| v/s Ratio Perm | c0.04 | | | | 0.02 | | c0.31 | | | | 0.23 | |
| v/c Ratio | 0.45 | 0.12 | | | 0.19 | | 0.84 | 0.14 | | | 0.69 | |
| Uniform Delay, d1 | 44.0 | 42.8 | | | 43.1 | | 13.8 | 2.2 | | | 28.8 | |
| Progression Factor | 1.00 | 1.00 | | | 1.00 | | 1.00 | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | 3.6 | 0.4 | | | 0.8 | | 7.0 | 0.2 | | | 4.1 | |
| Delay (s) | 47.6 | 43.2 | | | 43.8 | | 20.8 | 2.4 | | | 32.9 | |
| Level of Service | D | D | | | D | | C | A | | | C | |
| Approach Delay (s) | | 45.8 | | | 43.8 | | | 17.1 | | | 32.9 | |
| Approach LOS | | D | | | D | | | B | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 25.1 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.82 | | |
| Actuated Cycle Length (s) | 101.2 | Sum of lost time (s) | 14.4 |
| Intersection Capacity Utilization | 81.7% | 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) | 102 | 13 | 1 | 0 | 11 | 0 | 1 | 0 | 0 | 0 | 0 | 21 |
| Future Volume (Veh/h) | 102 | 13 | 1 | 0 | 11 | 0 | 1 | 0 | 0 | 0 | 0 | 21 |
| 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) | 111 | 14 | 1 | 0 | 12 | 0 | 1 | 0 | 0 | 0 | 0 | 23 |
| 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 | 12 | | | 15 | | | 272 | 248 | 14 | 248 | 249 | 12 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 12 | | | 15 | | | 272 | 248 | 14 | 248 | 249 | 12 |
| 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 % | 93 | | | 100 | | | 100 | 100 | 100 | 100 | 100 | 98 |
| cM capacity (veh/h) | 1607 | | | 1616 | | | 635 | 612 | 1071 | 668 | 612 | 1069 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 126 | 12 | 1 | 23 |
| Volume Left | 111 | 0 | 1 | 0 |
| Volume Right | 1 | 0 | 0 | 23 |
| cSH | 1607 | 1616 | 635 | 1069 |
| Volume to Capacity | 0.07 | 0.00 | 0.00 | 0.02 |
| Queue Length 95th (m) | 1.8 | 0.0 | 0.0 | 0.5 |
| Control Delay (s) | 6.6 | 0.0 | 10.7 | 8.4 |
| Lane LOS | A | | B | A |
| Approach Delay (s) | 6.6 | 0.0 | 10.7 | 8.4 |
| Approach LOS | | | B | A |

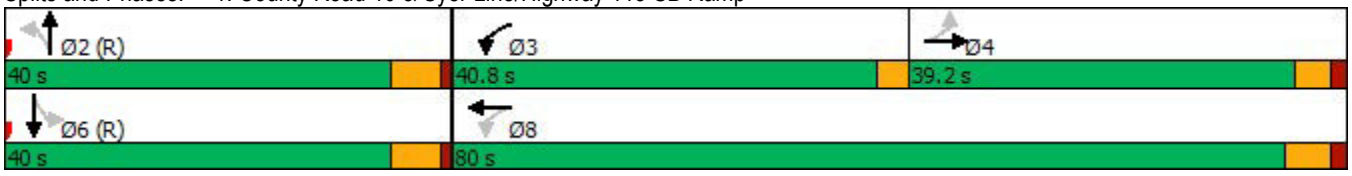
| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 6.4 | | | |
| Intersection Capacity Utilization | 23.6% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |

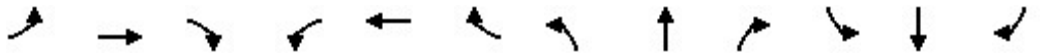
| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Traffic Volume (vph) | 15 | 10 | 744 | 18 | 26 | 322 | 45 | 163 |
| Future Volume (vph) | 15 | 10 | 744 | 18 | 26 | 322 | 45 | 163 |
| Lane Group Flow (vph) | 0 | 60 | 767 | 25 | 0 | 396 | 46 | 175 |
| 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 | 40.8 | 80.0 | 40.0 | 40.0 | 40.0 | 40.0 |
| Total Split (%) | 32.7% | 32.7% | 34.0% | 66.7% | 33.3% | 33.3% | 33.3% | 33.3% |
| 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 | | 0.13 | 0.83 | 0.03 | | 0.84 | 0.29 | 0.36 |
| Control Delay | | 16.9 | 24.3 | 7.4 | | 56.7 | 39.7 | 36.3 |
| Queue Delay | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Delay | | 16.9 | 24.3 | 7.4 | | 56.7 | 39.7 | 36.3 |
| Queue Length 50th (m) | | 4.5 | 117.2 | 1.7 | | 91.3 | 8.9 | 34.1 |
| Queue Length 95th (m) | | 15.4 | 167.7 | 5.2 | | #144.8 | 20.6 | 55.1 |
| Internal Link Dist (m) | | 592.7 | | 625.0 | | 491.5 | | 559.6 |
| Turn Bay Length (m) | | | 100.0 | | | | 82.0 | |
| Base Capacity (vph) | | 464 | 926 | 938 | | 473 | 157 | 486 |
| 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 | | 0.13 | 0.83 | 0.03 | | 0.84 | 0.29 | 0.36 |

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) | 15 | 10 | 34 | 744 | 18 | 6 | 26 | 322 | 36 | 45 | 163 | 7 |
| Future Volume (vph) | 15 | 10 | 34 | 744 | 18 | 6 | 26 | 322 | 36 | 45 | 163 | 7 |
| 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 | | 0.92 | | 1.00 | 0.96 | | | 0.99 | | 1.00 | 0.99 | |
| Flt Protected | | 0.99 | | 0.95 | 1.00 | | | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1521 | | 1662 | 1514 | | | 1688 | | 1662 | 1691 | |
| Flt Permitted | | 0.95 | | 0.71 | 1.00 | | | 0.97 | | 0.31 | 1.00 | |
| Satd. Flow (perm) | | 1459 | | 1234 | 1514 | | | 1642 | | 547 | 1691 | |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 15 | 10 | 35 | 767 | 19 | 6 | 27 | 332 | 37 | 46 | 168 | 7 |
| RTOR Reduction (vph) | 0 | 24 | 0 | 0 | 2 | 0 | 0 | 3 | 0 | 0 | 1 | 0 |
| Lane Group Flow (vph) | 0 | 36 | 0 | 767 | 23 | 0 | 0 | 393 | 0 | 46 | 174 | 0 |
| Heavy Vehicles (%) | 0% | 14% | 4% | 0% | 15% | 0% | 5% | 2% | 0% | 0% | 3% | 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) | | 36.2 | | 74.2 | 74.2 | | | 34.4 | | 34.4 | 34.4 | |
| Effective Green, g (s) | | 36.2 | | 74.2 | 74.2 | | | 34.4 | | 34.4 | 34.4 | |
| Actuated g/C Ratio | | 0.30 | | 0.62 | 0.62 | | | 0.29 | | 0.29 | 0.29 | |
| 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) | | 440 | | 891 | 936 | | | 470 | | 156 | 484 | |
| v/s Ratio Prot | | | | c0.26 | 0.01 | | | | | | 0.10 | |
| v/s Ratio Perm | | 0.02 | | c0.27 | | | | c0.24 | | 0.08 | | |
| v/c Ratio | | 0.08 | | 0.86 | 0.02 | | | 0.84 | | 0.29 | 0.36 | |
| Uniform Delay, d1 | | 30.0 | | 16.7 | 8.9 | | | 40.2 | | 33.3 | 34.0 | |
| Progression Factor | | 1.00 | | 1.00 | 1.00 | | | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 0.4 | | 8.5 | 0.0 | | | 16.1 | | 4.8 | 2.1 | |
| Delay (s) | | 30.4 | | 25.2 | 8.9 | | | 56.2 | | 38.1 | 36.1 | |
| Level of Service | | C | | C | A | | | E | | D | D | |
| Approach Delay (s) | | 30.4 | | | 24.7 | | | 56.2 | | | 36.5 | |
| Approach LOS | | C | | | C | | | E | | | D | |

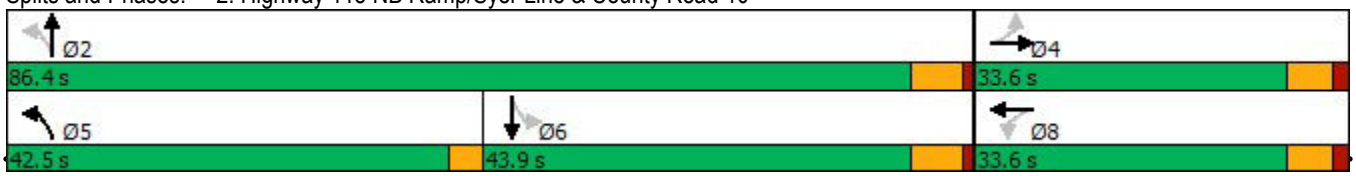
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 35.2 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.87 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 104.6% | ICU Level of Service | G |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

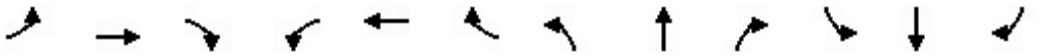
| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | |
| Traffic Volume (vph) | 135 | 5 | 20 | 60 | 572 | 208 | 35 | 856 |
| Future Volume (vph) | 135 | 5 | 20 | 60 | 572 | 208 | 35 | 856 |
| Lane Group Flow (vph) | 153 | 65 | 0 | 142 | 650 | 255 | 0 | 1057 |
| 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 | 42.5 | 86.4 | 43.9 | 43.9 |
| Total Split (%) | 28.0% | 28.0% | 28.0% | 28.0% | 35.4% | 72.0% | 36.6% | 36.6% |
| 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 | | 0.0 |
| Total Lost Time (s) | 5.8 | 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 | 0.20 | | 0.46 | 1.02 | 0.21 | | 1.03 |
| Control Delay | 80.6 | 12.6 | | 38.8 | 71.4 | 6.6 | | 73.5 |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |
| Total Delay | 80.6 | 12.6 | | 38.8 | 71.4 | 6.6 | | 73.5 |
| Queue Length 50th (m) | 34.8 | 1.2 | | 25.0 | ~148.1 | 17.9 | | ~141.7 |
| Queue Length 95th (m) | #61.6 | 12.4 | | 43.5 | #228.8 | 31.8 | | #191.2 |
| Internal Link Dist (m) | | 658.6 | | 1175.6 | | 599.4 | | 491.5 |
| Turn Bay Length (m) | 100.0 | | | | 85.0 | | | |
| Base Capacity (vph) | 238 | 415 | | 402 | 638 | 1224 | | 1028 |
| 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 | 0.64 | 0.16 | | 0.35 | 1.02 | 0.21 | | 1.03 |

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 113.7
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.

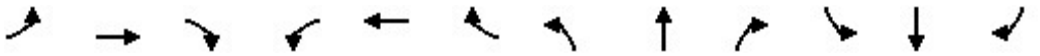
Splits and Phases: 2: Highway 115 NB Ramp/Syer Line & County Road 10





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 135 | 5 | 52 | 20 | 60 | 45 | 572 | 208 | 17 | 35 | 856 | 39 |
| Future Volume (vph) | 135 | 5 | 52 | 20 | 60 | 45 | 572 | 208 | 17 | 35 | 856 | 39 |
| Ideal Flow (vphpl) | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 | 1750 |
| Total Lost time (s) | 5.8 | 5.8 | | | 5.8 | | 3.0 | 5.6 | | | 5.6 | |
| Lane Util. Factor | 1.00 | 1.00 | | | 1.00 | | 1.00 | 1.00 | | | 0.95 | |
| Frt | 1.00 | 0.86 | | | 0.95 | | 1.00 | 0.99 | | | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | | 0.99 | | 0.95 | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | 1614 | 1512 | | | 1652 | | 1646 | 1715 | | | 3261 | |
| Flt Permitted | 0.57 | 1.00 | | | 0.94 | | 0.10 | 1.00 | | | 0.93 | |
| Satd. Flow (perm) | 971 | 1512 | | | 1573 | | 167 | 1715 | | | 3036 | |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Adj. Flow (vph) | 153 | 6 | 59 | 23 | 68 | 51 | 650 | 236 | 19 | 40 | 973 | 44 |
| RTOR Reduction (vph) | 0 | 48 | 0 | 0 | 18 | 0 | 0 | 2 | 0 | 0 | 3 | 0 |
| Lane Group Flow (vph) | 153 | 17 | 0 | 0 | 124 | 0 | 650 | 253 | 0 | 0 | 1054 | 0 |
| Heavy Vehicles (%) | 3% | 0% | 0% | 0% | 0% | 0% | 1% | 1% | 0% | 0% | 1% | 5% |
| 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 | | | 21.2 | | 81.0 | 81.0 | | | 38.4 | |
| Effective Green, g (s) | 21.2 | 21.2 | | | 21.2 | | 81.0 | 81.0 | | | 38.4 | |
| Actuated g/C Ratio | 0.19 | 0.19 | | | 0.19 | | 0.71 | 0.71 | | | 0.34 | |
| Clearance Time (s) | 5.8 | 5.8 | | | 5.8 | | 3.0 | 5.6 | | | 5.6 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | | 3.0 | | 3.0 | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | 181 | 282 | | | 293 | | 634 | 1222 | | | 1026 | |
| v/s Ratio Prot | | 0.01 | | | | | c0.36 | 0.15 | | | | |
| v/s Ratio Perm | c0.16 | | | | 0.08 | | c0.37 | | | | 0.35 | |
| v/c Ratio | 0.85 | 0.06 | | | 0.42 | | 1.03 | 0.21 | | | 1.03 | |
| Uniform Delay, d1 | 44.6 | 38.0 | | | 40.8 | | 31.4 | 5.5 | | | 37.6 | |
| Progression Factor | 1.00 | 1.00 | | | 1.00 | | 1.00 | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | 28.6 | 0.1 | | | 1.0 | | 42.3 | 0.4 | | | 35.4 | |
| Delay (s) | 73.3 | 38.1 | | | 41.8 | | 73.7 | 5.9 | | | 73.0 | |
| Level of Service | E | D | | | D | | E | A | | | E | |
| Approach Delay (s) | | 62.8 | | | 41.8 | | | 54.6 | | | 73.0 | |
| Approach LOS | | E | | | D | | | D | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 63.0 | HCM 2000 Level of Service | E |
| HCM 2000 Volume to Capacity ratio | 1.01 | | |
| Actuated Cycle Length (s) | 113.6 | 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 | | | |



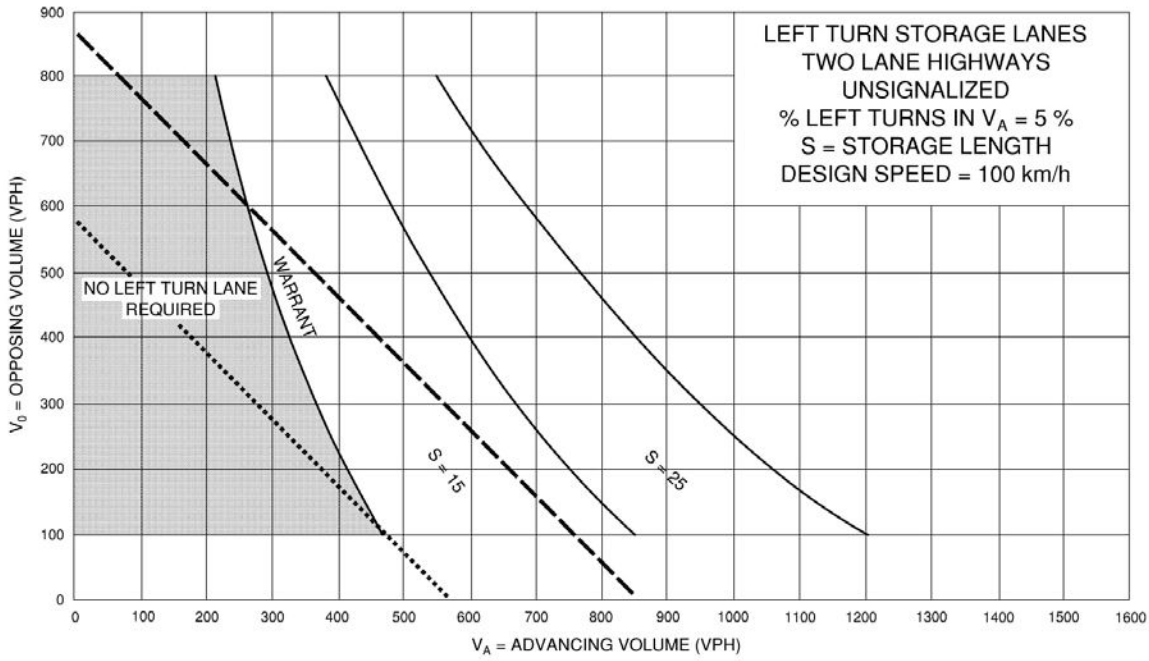
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 25 | 30 | 1 | 0 | 28 | 0 | 1 | 0 | 0 | 0 | 0 | 87 |
| Future Volume (Veh/h) | 25 | 30 | 1 | 0 | 28 | 0 | 1 | 0 | 0 | 0 | 0 | 87 |
| 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) | 27 | 33 | 1 | 0 | 30 | 0 | 1 | 0 | 0 | 0 | 0 | 95 |
| 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 | 30 | | | 34 | | | 212 | 118 | 34 | 118 | 118 | 30 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 30 | | | 34 | | | 212 | 118 | 34 | 118 | 118 | 30 |
| 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 % | 98 | | | 100 | | | 100 | 100 | 100 | 100 | 100 | 91 |
| cM capacity (veh/h) | 1583 | | | 1591 | | | 672 | 763 | 1046 | 847 | 763 | 1044 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 61 | 30 | 1 | 95 |
| Volume Left | 27 | 0 | 1 | 0 |
| Volume Right | 1 | 0 | 0 | 95 |
| cSH | 1583 | 1591 | 672 | 1044 |
| Volume to Capacity | 0.02 | 0.00 | 0.00 | 0.09 |
| Queue Length 95th (m) | 0.4 | 0.0 | 0.0 | 2.4 |
| Control Delay (s) | 3.3 | 0.0 | 10.4 | 8.8 |
| Lane LOS | A | | B | A |
| Approach Delay (s) | 3.3 | 0.0 | 10.4 | 8.8 |
| Approach LOS | | | B | A |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 5.6 | | | |
| Intersection Capacity Utilization | 22.5% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |

# Appendix G –
# MTO Left Turn Analysis

**Exhibit 9A-22**




**Highway 115 SB Ramp & Syer Line / County Road 10**
2023 Existing - Northbound
Critical Case - PM Peak Hour

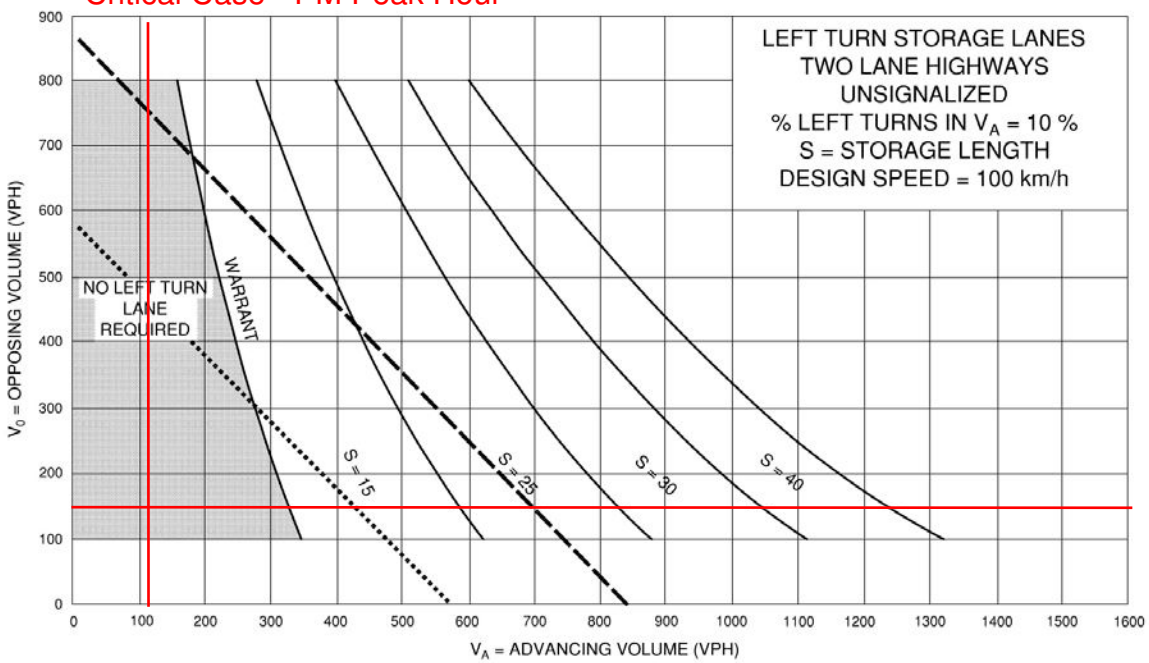
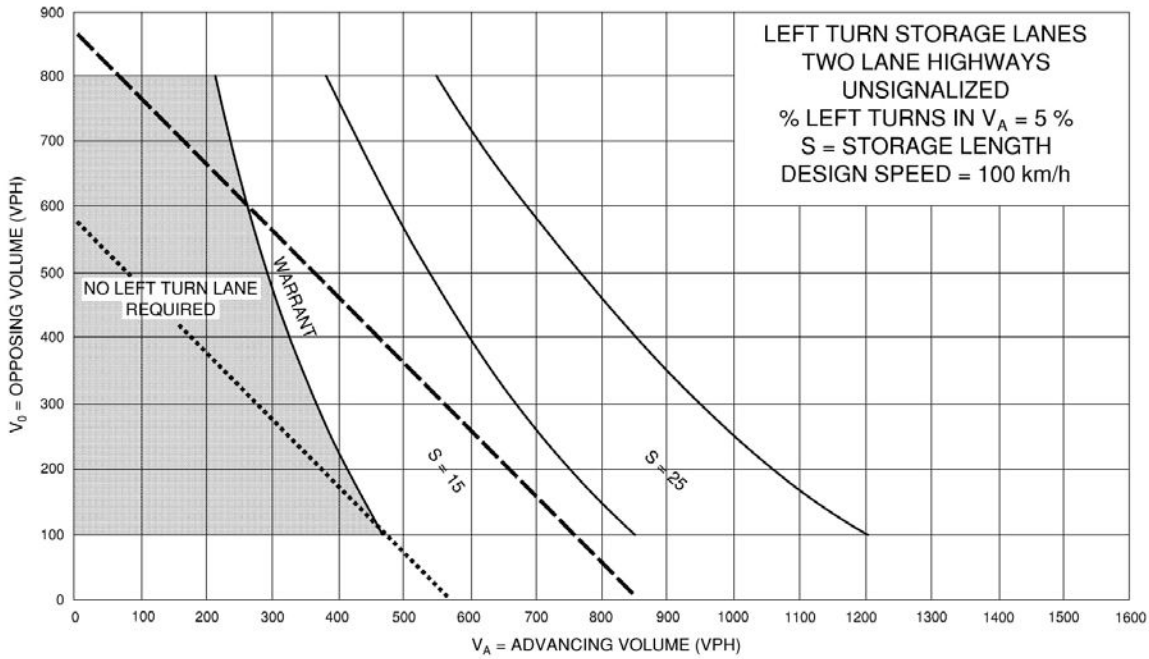


**Exhibit 9A-22**




**Highway 115 SB Ramp & Syer Line / County Road 10**
2028 Background - Northbound
Critical Case - PM Peak Hour

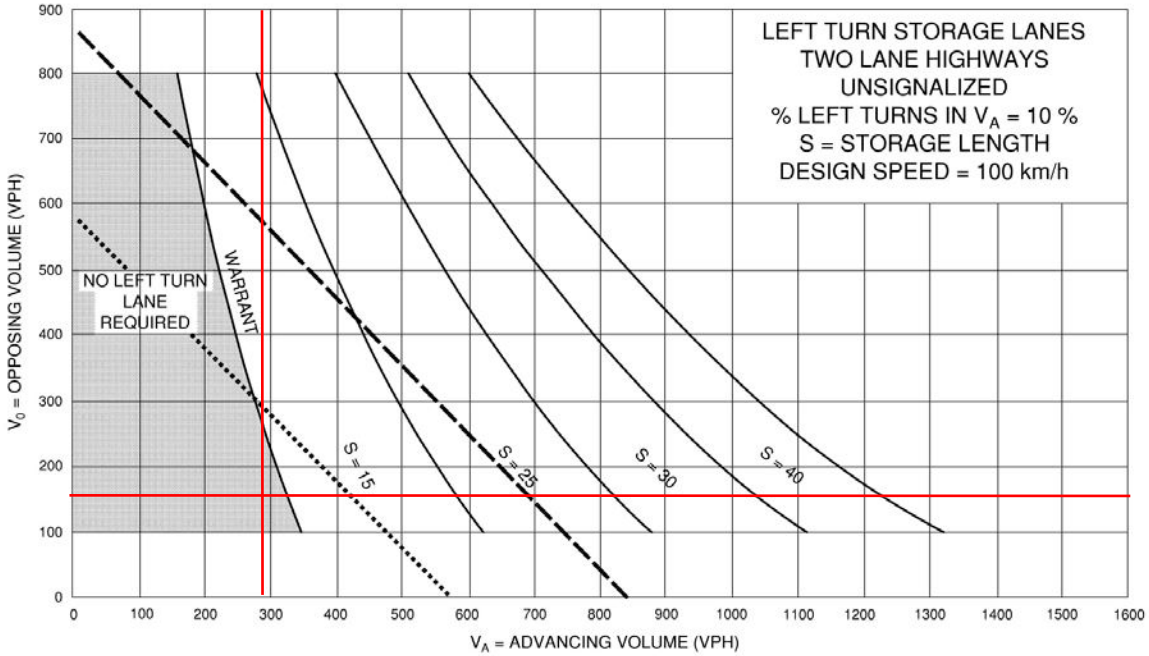
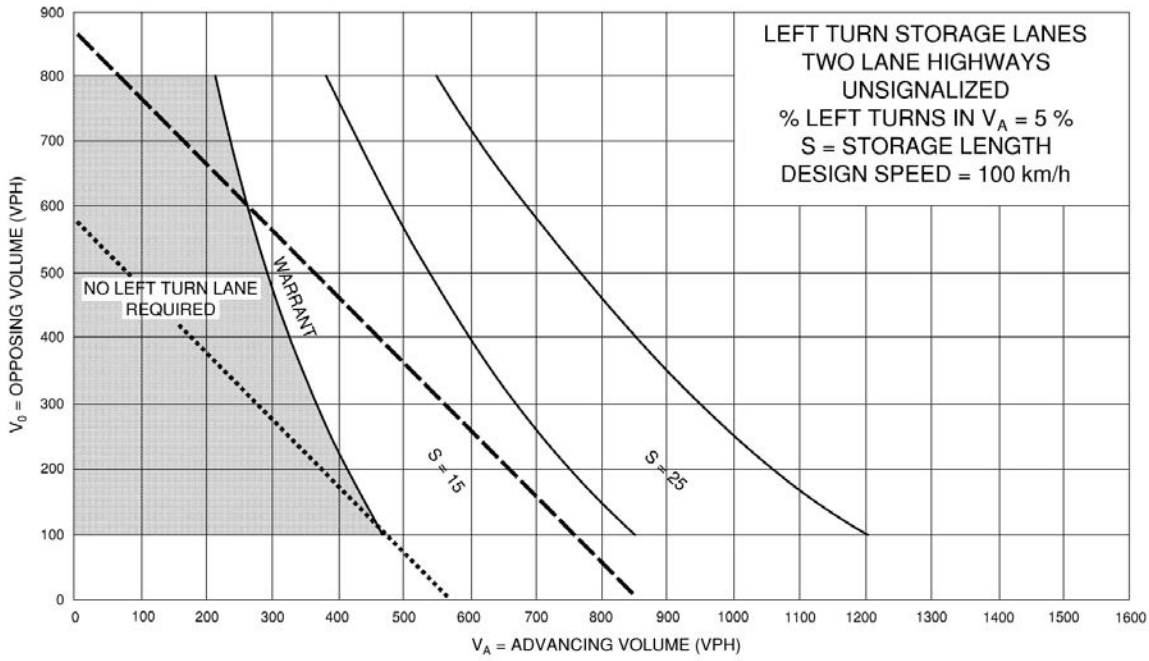


**Exhibit 9A-22**




**Highway 115 SB Ramp & Syer Line / County Road 10**
2033 Background - Northbound
Critical Case - PM Peak Hour

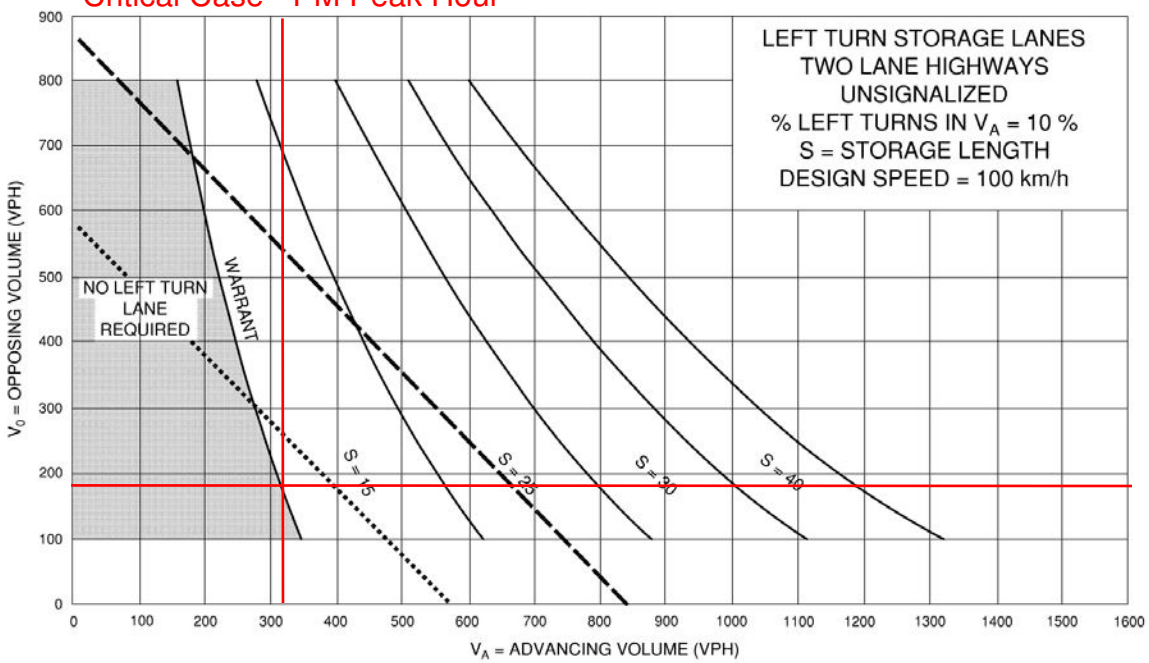
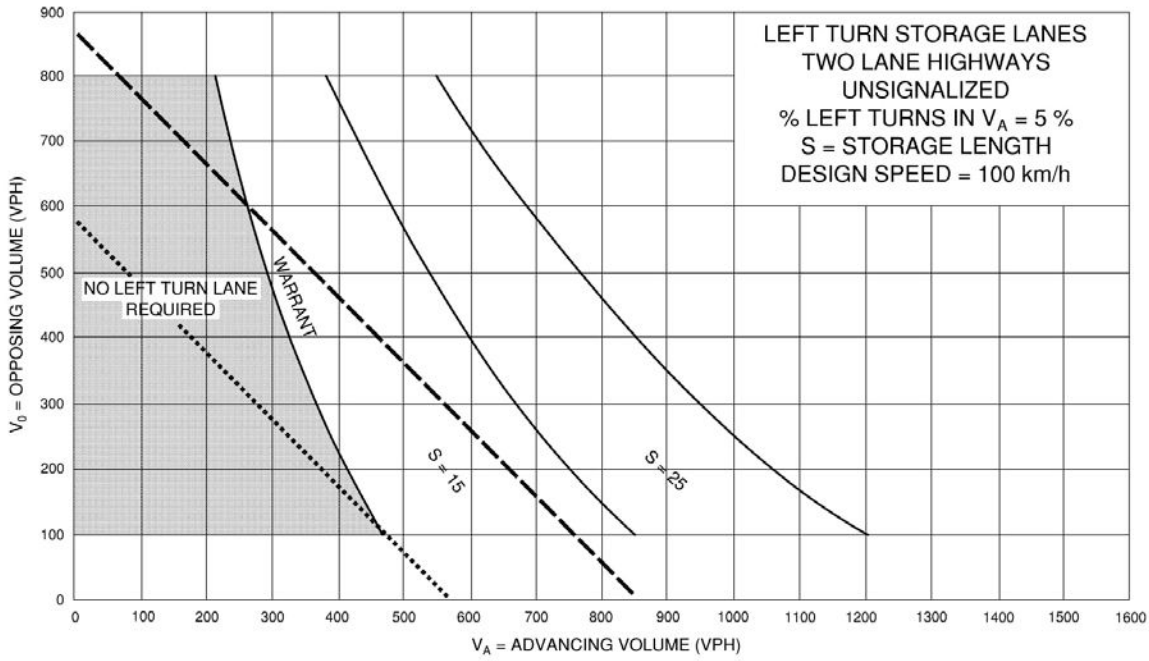


**Exhibit 9A-22**




**Highway 115 SB Ramp & Syer Line / County Road 10**
2028 Total - Northbound
Critical Case - PM Peak Hour

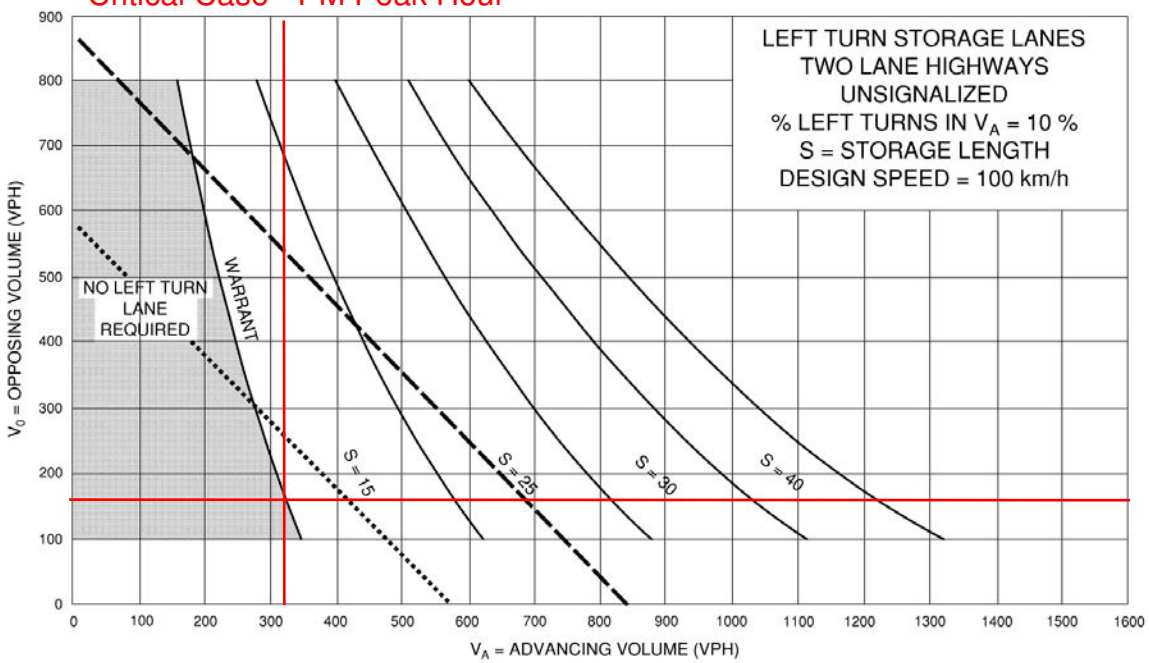
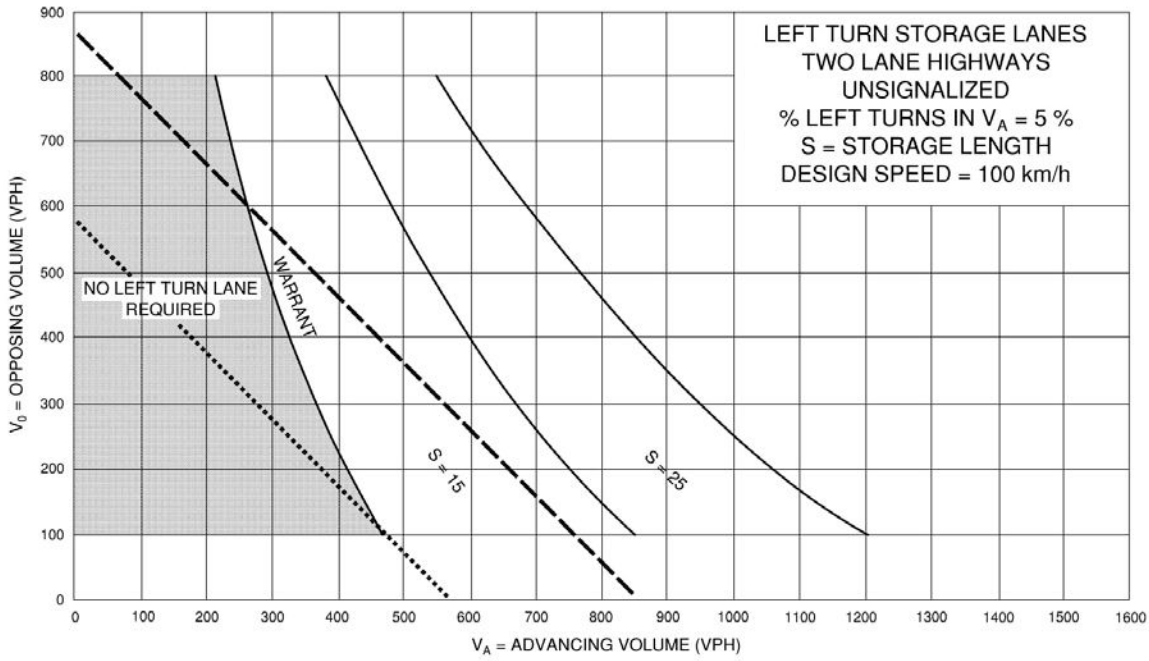
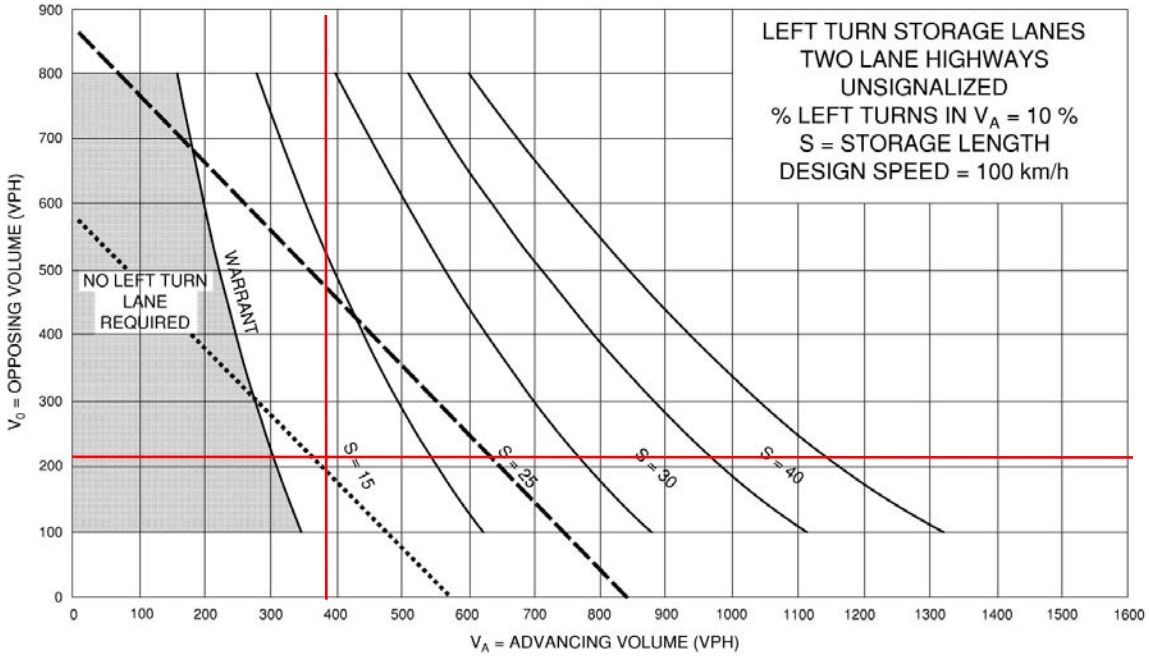


**Exhibit 9A-22**



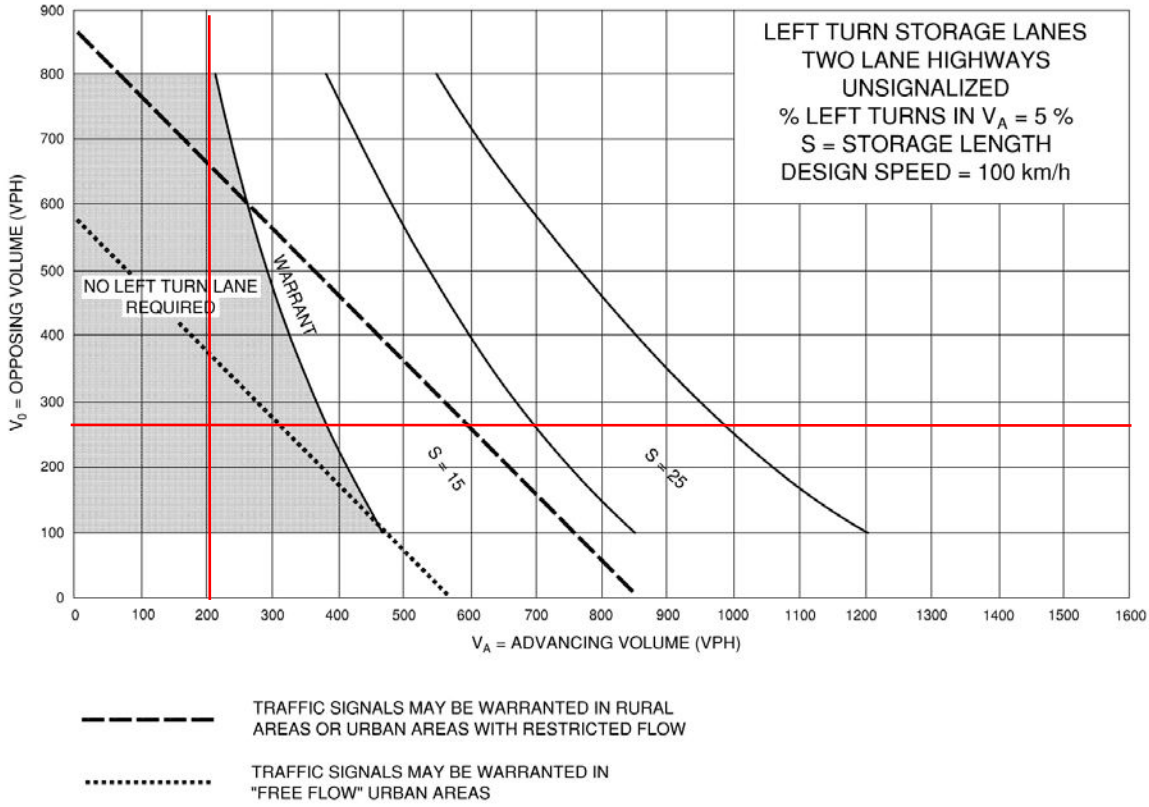

**Highway 115 SB Ramp & Syer Line / County Road 10**
2038 Total - Northbound
Critical Case - PM Peak Hour

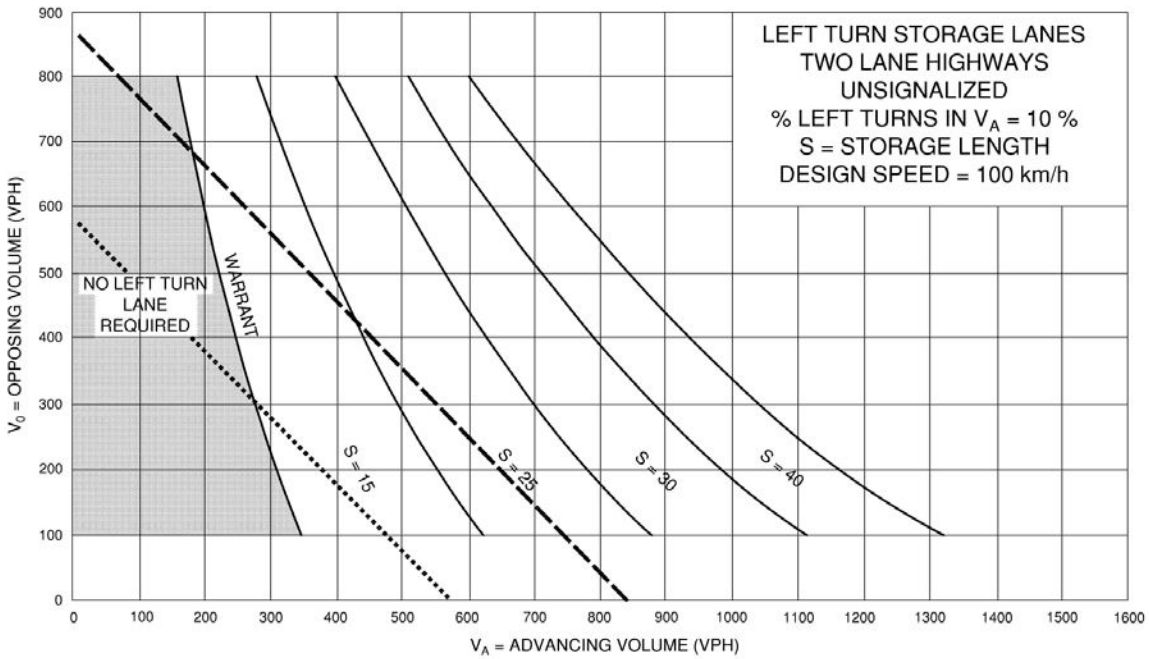


**Highway 115 NB Ramp & Syer Line / County Road 10**

2023 Existing - Southbound **Exhibit 9A-22**

Critical Case - PM Peak Hour

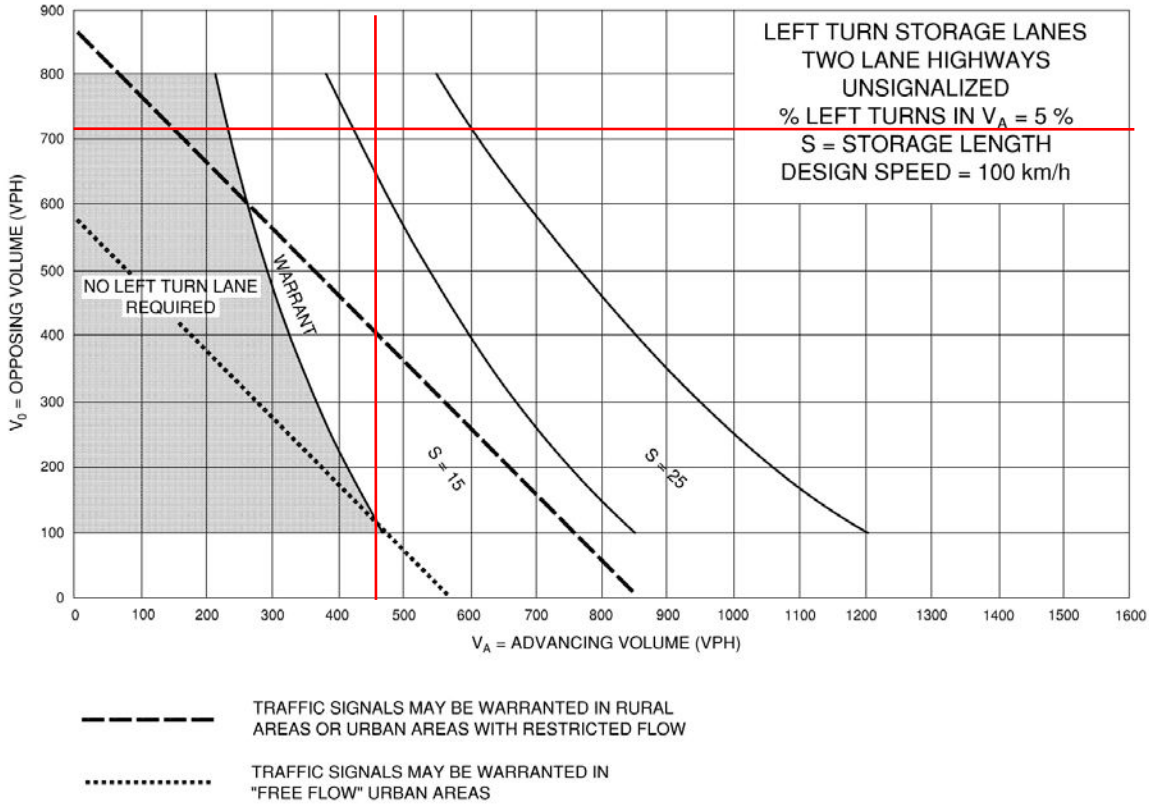


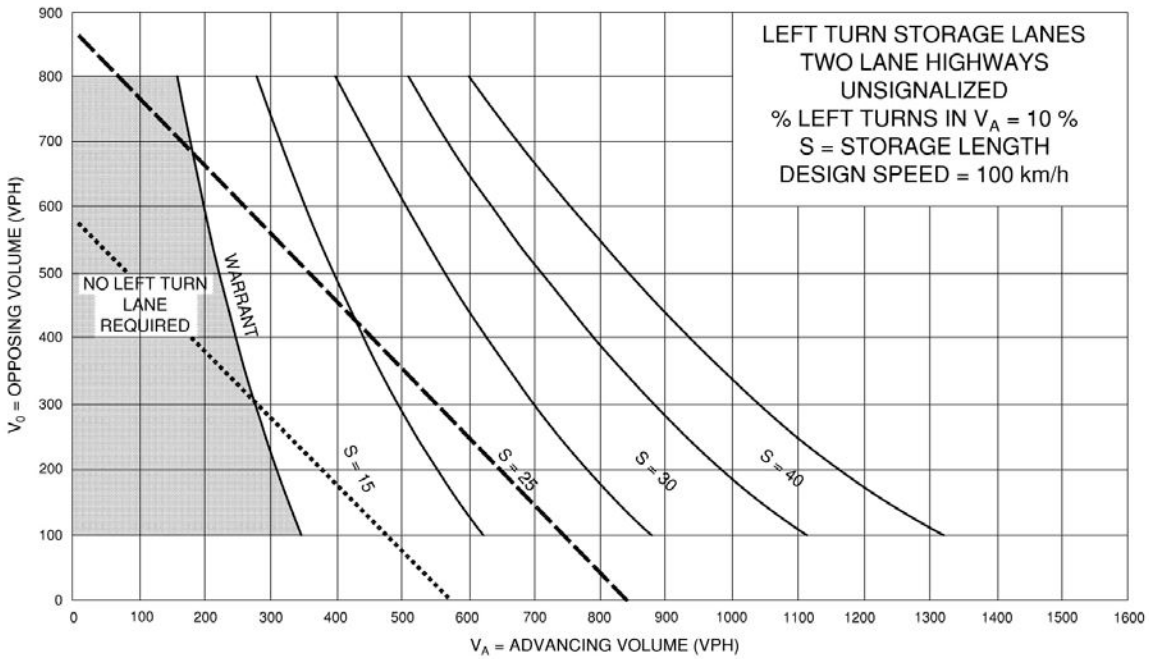



**Highway 115 NB Ramp & Syer Line / County Road 10**

2028 Background - Southbound **Exhibit 9A-22**

Critical Case - PM Peak Hour

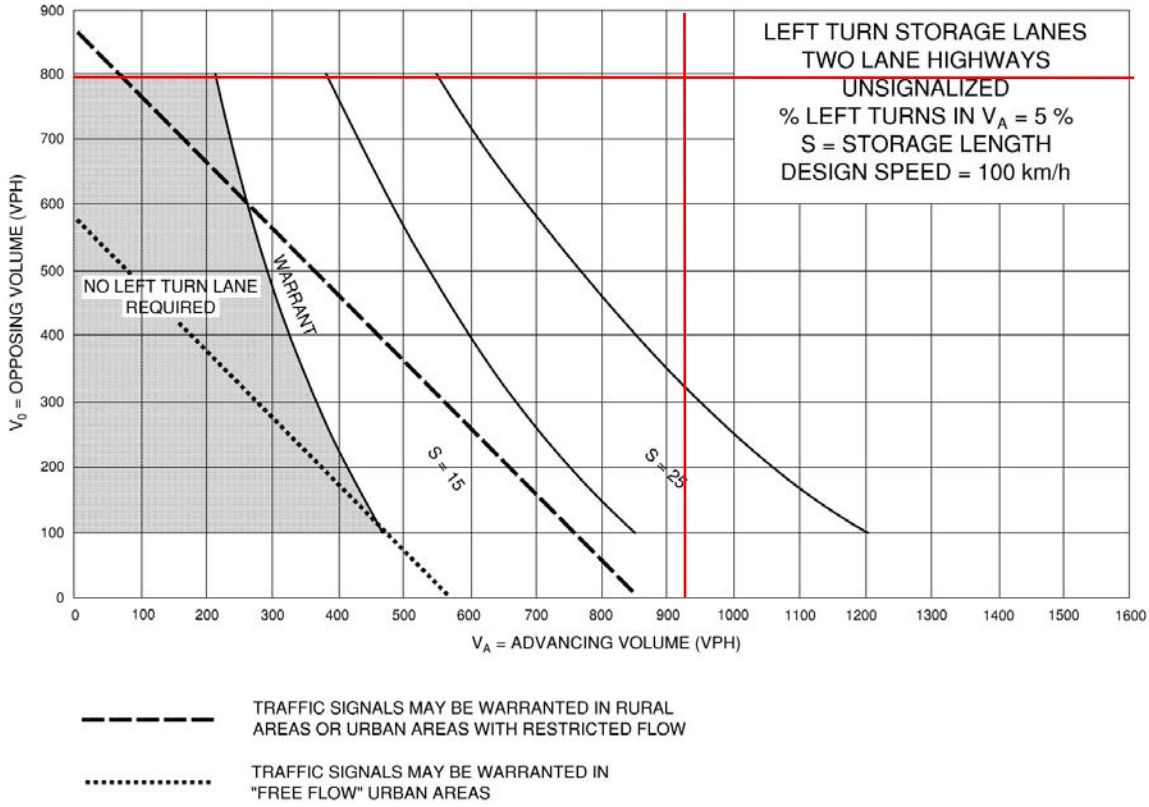


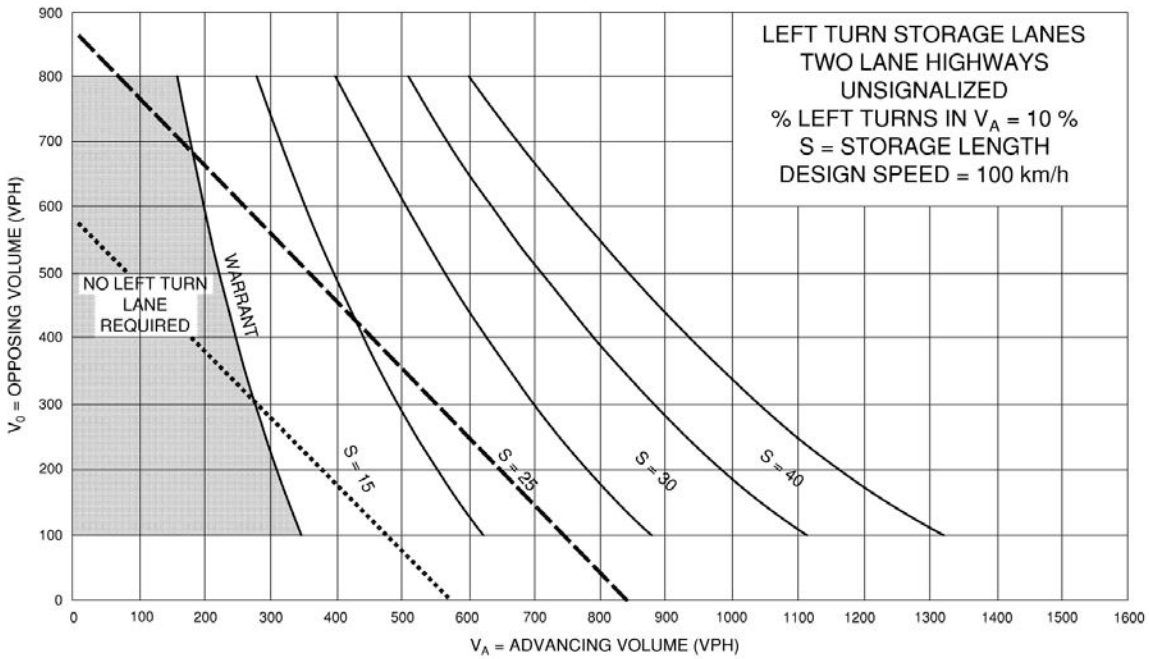



**Highway 115 NB Ramp & Syer Line / County Road 10**

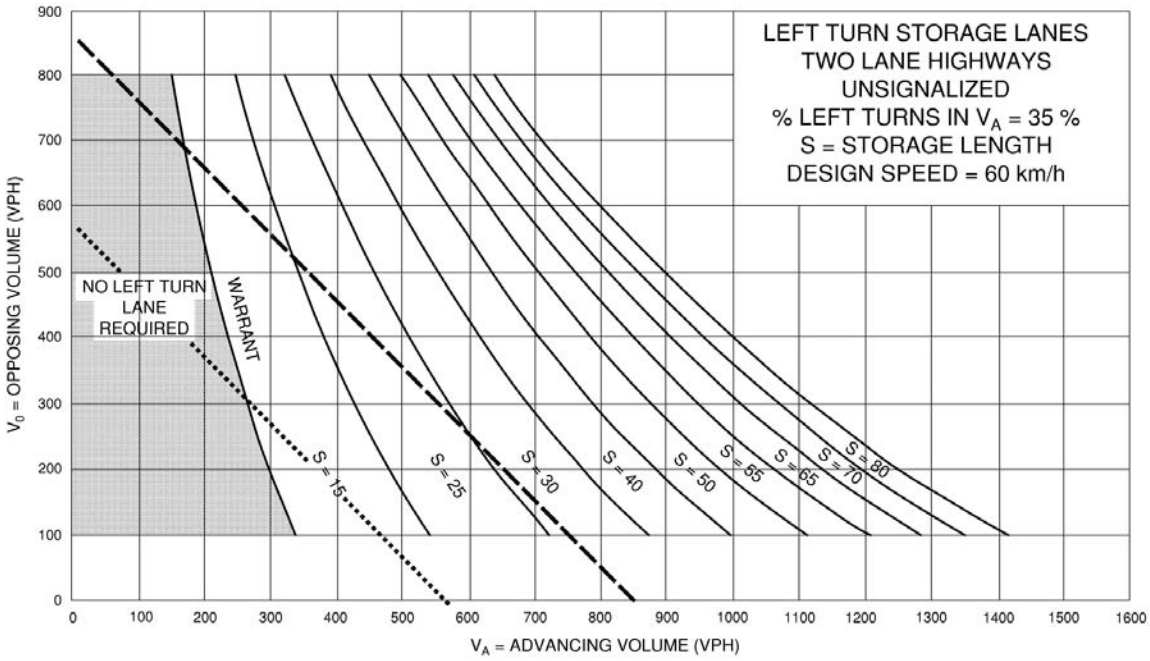
2038 Total - Southbound **Exhibit 9A-22**

Critical Case - PM Peak Hour

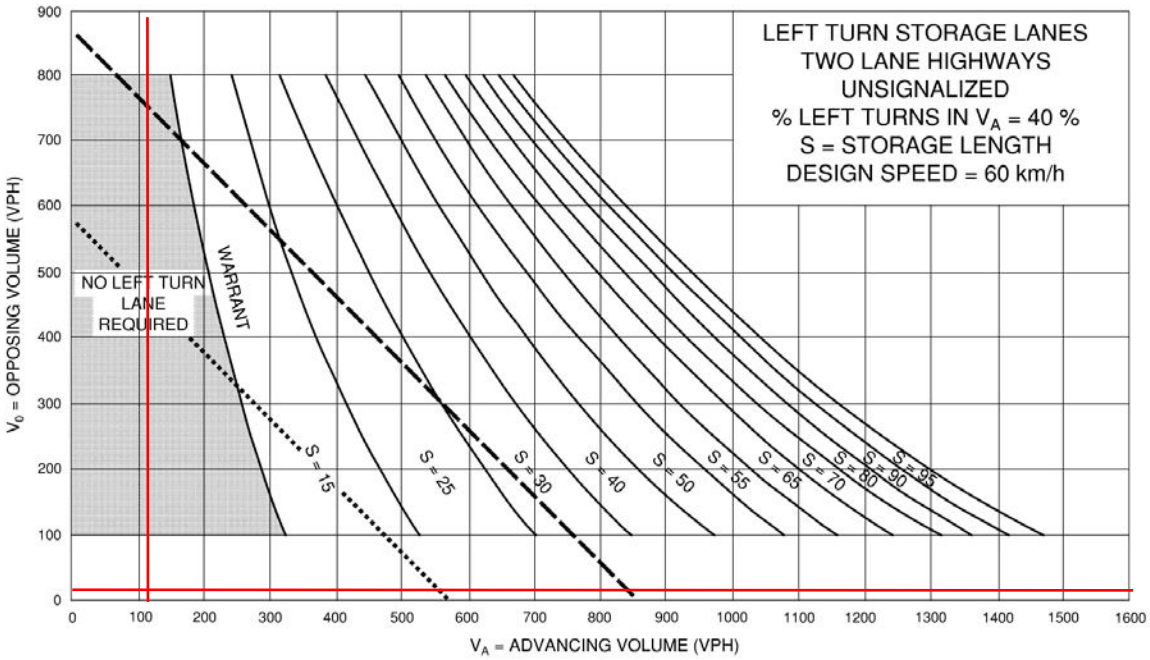


## Exhibit 9A-9




**Syer Line / Street A**
2038 Total - Eastbound
Critical Case - AM Peak Hour



# Appendix H –
# OTM Signal Justification Sheets

**Justification No. 7 - 2028 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 | 465 | 97% | 81% | NO | NO |
| | B. Vehicle volume, along minor streets (average hour) | 120 | 271 | 226% | | YES | YES |
| 2. Delay to cross traffic | A. Vehicle volume, major street (average hour) | 480 | 174 | 36% | 30% | NO | NO |
| | B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour) | 50 | 253 | 506% | | YES | YES |

**Justification No. 7 - 2038 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 | 593 | 124% | 103% | YES | YES |
| | B. Vehicle volume, along minor streets (average hour) | 120 | 333 | 278% | | YES | YES |
| 2. Delay to cross traffic | A. Vehicle volume, major street (average hour) | 480 | 233 | 49% | 41% | NO | NO |
| | B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour) | 50 | 306 | 613% | | YES | YES |

**Justification No. 7 - 2023 Existing 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 | 476 | 99% | 34% | NO | NO |
| | B. Vehicle volume, along minor streets (average hour) | 120 | 48 | 40% | | NO | NO |
| 2. Delay to cross traffic | A. Vehicle volume, major street (average hour) | 480 | 416 | 87% | 57% | NO | NO |
| | B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour) | 50 | 34 | 68% | | NO | NO |

**Justification No. 7 - 2038 Background 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 | 896 | 187% | 72% | YES | YES |
| | B. Vehicle volume, along minor streets (average hour) | 120 | 104 | 86% | | NO | NO |
| 2. Delay to cross traffic | A. Vehicle volume, major street (average hour) | 480 | 769 | 160% | 113% | YES | YES |
| | B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour) | 50 | 68 | 135% | | YES | YES |

**Justification No. 7 - 2038 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 | 80 | 11% | 7% | NO | NO |
| | B. Vehicle volume, along minor streets (average hour) | 255 | 28 | 11% | | NO | NO |
| 2. Delay to cross traffic | A. Vehicle volume, major street (average hour) | 720 | 52 | 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<br><br>Cross Tabulation Query Form - Trip - 2016 v1.1<br>Row: Planning district of origin - pd_orig<br>Column: Planning district of destination - pd_dest<br><br><br>Filters:<br>(Planning district of destination - pd_dest In 104); and<br>(Start time of trip - start_time In 700 - 900); and<br>(Trip purpose of destination - purp_dest In W, R)<br><br>Trip 2016<br>ROW : pd_orig<br>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<br><br>Cross Tabulation Query Form - Trip - 2016 v1.1<br>Row: Planning district of destination - pd_dest<br>Column: Planning district of origin - pd_orig<br><br><br>Filters:<br>(Planning district of origin - pd_orig In 104, ); and<br>(Start time of trip - start_time In 700 - 900); and<br>(Trip purpose of destination - purp_dest In W, R)<br><br>Trip 2016<br>ROW : pd_dest<br>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
```