



MUCCI FARMS

# Greenhouse Development 609 Road 3E, Town of Kingsville

Traffic Impact Study

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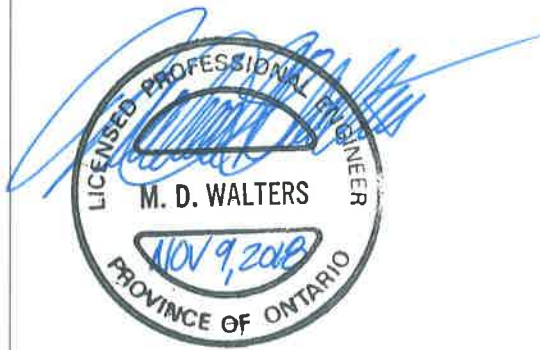
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## 1.0 Introduction

### 1.1 Purpose

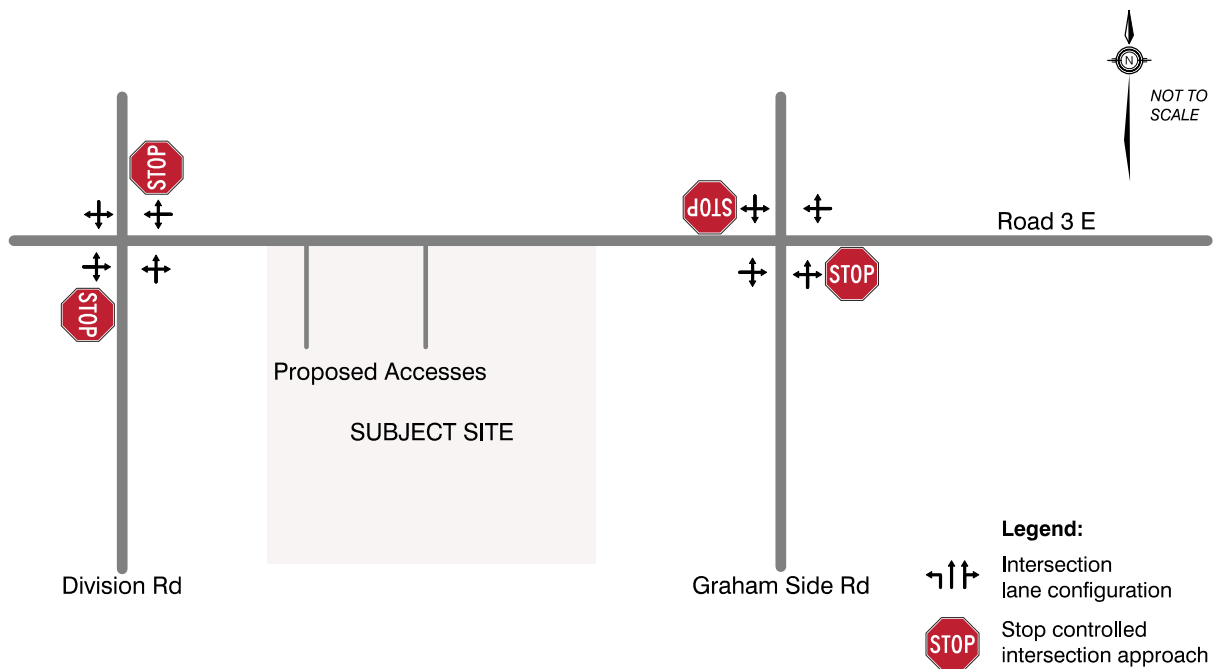
Dillon Consulting Limited (“Dillon”) has been retained by Mucci Farms to undertake a Traffic Impact Study (TIS) to assess a proposed greenhouse development at 609 Road 3E in the Town of Kingsville. The property is currently agricultural farm land. The development application involves the construction of a number of greenhouses and warehouses for the production of cannabis. *Figure 1* illustrates the site location in the context of Kingsville; *Figure 2* illustrates the existing conditions of the site.

This report documents the anticipated change to traffic volumes and intersection operations due to the proposed development; provides an assessment of the need for modifications to traffic control and/or roadway infrastructure; reviews the acceptability of the current road surface on Road 3E; assesses the proposed site driveways from a geometrics and sight distance perspective; and comments on the anticipated travel behaviour associated with migrant workers and its impact on the road network.

Figure 1: Site Location



Figure 2: Existing Site Configuration



## 1.2 Proposed Development

The proposed site plan is presented in *Appendix A*. The subject site is currently agricultural farm land. The proposed site plan includes: greenhouses and warehouses related to the production of cannabis. Also included is a proposed bunkhouse which will house migrant workers on-site. The greenhouses will be phased in over the course of the next 4+ years. It is currently envisioned that the greenhouses, and related warehouse facilities, will be constructed over four phases. The following four subsections describe the anticipating phasing of facilities on site.

### 1.2.1 Phase 1

This initial phase will see the construction of 26 greenhouses covering 13.78 acres and a warehouse covering 2.82 acres. It will also include the construction of a bunkhouse for the workers who are expected to reside on-site. This construction is expected to occur in 2019.

Two site driveways will also be constructed during this initial phase. The easternmost driveway will function as the main driveway on the site. It will allow motorists to access the site parking lot (containing 117 parking spaces) as well as the warehouse. At the northeast corner of the warehouse, there will be a loading area for truck deliveries. Both employees who drive to the site and truck drivers bringing supplies to the site will utilize this driveway.

The westernmost driveway will largely function as a means of access to the bunkhouse. An internal connection farther south on the site will allow motorists to travel between the bunkhouse and the warehouse and parking lot situated to the east.

#### 1.2.2 Phase 2

This second phase will involve the construction of 25 additional greenhouses covering 13.26 acres. This construction is expected to occur in 2020. No additional site driveways will be constructed during this second phase.

#### 1.2.3 Phase 3

This third phase will include the construction of 26 additional greenhouses covering 13.78 acres and an additional warehouse covering 2.82 acres. This will increase the number of warehouses on site to two (2). This construction is expected to occur in 2021.

#### 1.2.4 Phase 4

This fourth and final phase will see the construction of 25 additional greenhouses covering 13.26 acres. This construction is expected to occur in 2022.

### 1.3 Scope of Analyses

This report documents the following:

- Existing traffic volumes, and traffic projections for the main site driveway and two study area intersections under baseline conditions and with development of the full site;
- Intersection capacity analyses under baseline conditions, future background conditions and total future conditions;
- A review of the proposed site driveways from a geometric and sight line perspective;
- A review of the site's impact on Road 3E as it relates to the suitability of the posted speed limit, road width and road surface type; and,
- A review of migrant workers and their travel behaviour.

Turning movement traffic counts were completed at the intersections of Road 3E and Division Road and Road 3E and Graham Side Road. Automated traffic counts were also undertaken at a midblock location along Road 3E, just east of municipal address 295 Road 3E.

Traffic projections and intersection analyses were completed for the two commuter peak hours of a typical weekday (the weekday AM and PM peak hours). Even though some workers at the site will arrive at the site prior to the AM peak hour, the majority of traffic generated by the site will occur during the weekday AM and PM peak hours.



The analyses were conducted for five distinct horizon years which are consistent with the planned phasing of construction on the site (Phase 1 – 2019, Phase 2 – 2020, Phase 3 – 2021 and Phase 4 – 2022) as well as a five-year horizon (2027) following full build out.

## 2.0 Existing Conditions

### 2.1 Existing Transportation Network Characteristics

The following describes the existing road network in the immediate study area:

- *Road 3E* is a local roadway under the jurisdiction of the Town of Kingsville. It is an east-west roadway which extends to the east to the municipal border with Leamington (and following that, extends as Mersea Road 3 and Wilkinson Drive to Erie Street) and to the west to Arner Townline (County Road 23). In the vicinity of the site, Road 3E is largely rural in nature. Between Division Road and Graham Side Road, it largely functions to provide access to homes as well as the Jack Miner Public School (located just east of Division Road). The posted speed limit on Road 3E is 60 km/h. In the vicinity of the site, it has a rural two-lane cross-section consisting of one lane per direction plus intermittent gravel shoulders. The roadway has a tar and chip surface.
- *Division Road* is under the jurisdiction of the County of Essex as County Road 29. It is the main north-south roadway extending from Highway 3 to the north to the Town of Kingsville built-up area to the south. It functions to provide both access to a number of land uses as well as carry through traffic between Highway 3 and Kingsville. South of Highway 3, it has a posted speed limit of 60 km/h for approximately 650 metres. Beyond that point, the speed limit is 80 km/h to a point approximately 700 metres north of the Road 3E intersection. At that location, the posted speed limit is reduced to 60 km/h until approximately 170 metres of the Road 2E intersection (where the posted speed limit is further reduced to 50 km/h). In the vicinity of the Road 3E intersection, Division Road has a rural two-lane cross-section consisting of one lane per direction plus partially paved shoulders.
- *Graham Side Road* is a local roadway under the jurisdiction of the Town of Kingsville. It is a north-south roadway which extends from Road 4E (north of Highway 3) to Seaclyff Drive (County Road 20). As a local roadway, it primarily functions to provide access to adjacent properties. It does not have a posted speed limit, meaning a default 80 km/h speed limit will apply to this rural roadway. In the vicinity of the Road 3E intersection, it has a rural two-lane cross-section consisting of one lane per direction plus gravel shoulders.

The intersection of Road 3E and Division Road operates under two-way STOP control, with Division Road traffic having the right-of-way (meaning Road 3E traffic has to stop at the intersection). The Graham Side



Road intersection with Road 3E also operates under two-way STOP control, but Graham Side Road traffic has to stop (as Road 3E traffic has the right-of-way).

## 2.2 Existing Traffic Volumes

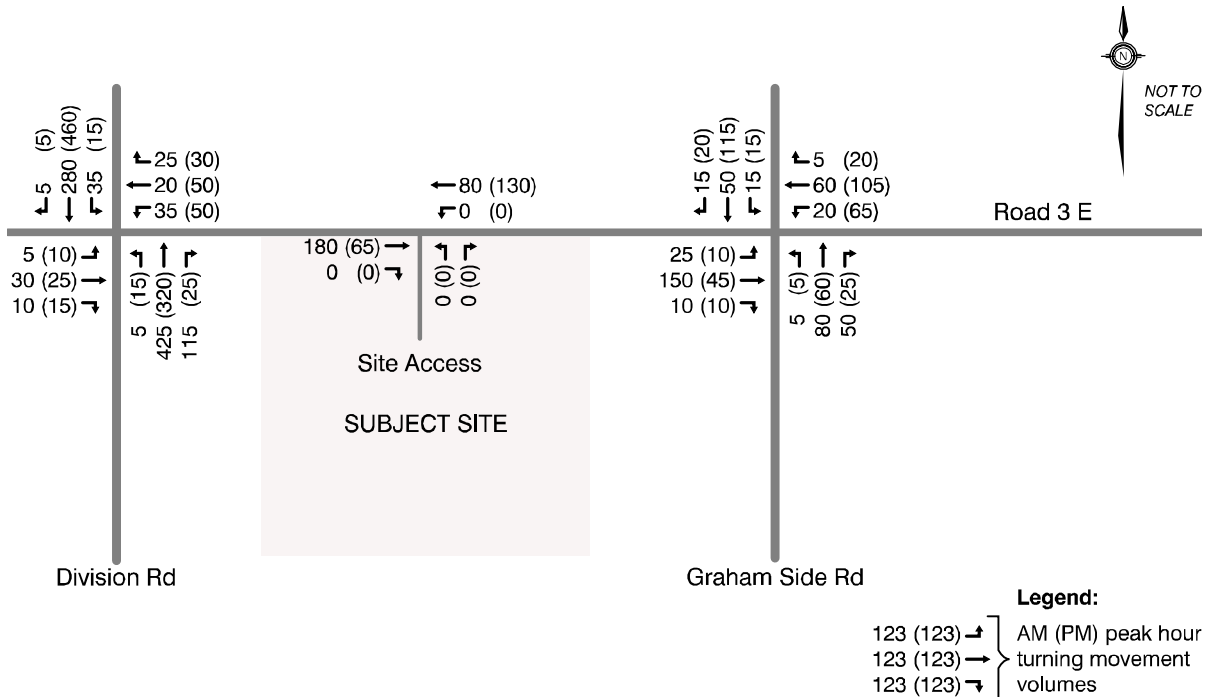
Turning movement count (TMC) traffic data were collected by Dillon at the intersections of Road 3E and Division Road and Road 3E and Graham Side Road. Automated traffic recording equipment was also installed on Road 3E just to the east of municipal address 295 Road 3E. This equipment collected two-way traffic volumes for a 24-hour period.

The intersection turning movement counts were collected on Tuesday, October 30, 2018 between the hours of 7:00 AM and 9:00 AM (weekday AM peak period) and between the hours of 4:00 PM and 6:00 PM (weekday PM peak period).

The 24-hour traffic volumes were recorded between Monday, October 29, 2018 (starting at 3:00 PM) and Tuesday, October 30, 2018 (ending at 3:00 PM).

Figure 3 illustrates the existing peak hour traffic volumes. Detailed count data are provided in Appendix B.

Figure 3: Existing Traffic Volumes



## 2.3 Existing Intersection Operations

Existing peak hour operations at the two Road 3E intersections were analyzed based on the methodology outlined in the *Highway Capacity Manual* (HCM), 2010 edition, facilitated using Synchro analysis software. The v/c ratio, level of service, average vehicle delay and 95<sup>th</sup> percentile queue length were noted. LOS definitions are provided in *Appendix C*. The analysis results are presented in *Table 1*. Analysis worksheets are provided in *Appendix D*.

Table 1: Existing Peak Hour Operations at Road 3E Intersections

| Intersection                | Peak hour  | Individual movement(s) |      |     |               |                                 |
|-----------------------------|------------|------------------------|------|-----|---------------|---------------------------------|
|                             |            | Movement               | v/c  | LOS | Delay (s/veh) | 95 <sup>th</sup> %ile queue (m) |
| Road 3E at Division Road    | Weekday AM | Eastbound              | 0.18 | C   | 21.0          | 0.6                             |
|                             |            | Westbound              | 0.32 | C   | 24.1          | 1.3                             |
|                             |            | Northbound             | 0.00 | A   | 7.9           | 0.0                             |
|                             |            | Southbound             | 0.04 | A   | 8.8           | 0.1                             |
|                             | Weekday PM | Eastbound              | 0.20 | C   | 21.1          | 0.7                             |
|                             |            | Westbound              | 0.52 | D   | 31.9          | 2.8                             |
|                             |            | Northbound             | 0.02 | A   | 8.4           | 0.0                             |
|                             |            | Southbound             | 0.01 | A   | 8.1           | 0.0                             |
| Road 3E at Graham Side Road | Weekday AM | Eastbound              | 0.02 | A   | 7.4           | 0.1                             |
|                             |            | Westbound              | 0.02 | A   | 7.6           | 0.0                             |
|                             |            | Northbound             | 0.23 | B   | 12.2          | 0.9                             |
|                             |            | Southbound             | 0.15 | B   | 12.3          | 0.5                             |
|                             | Weekday PM | Eastbound              | 0.01 | A   | 7.5           | 0.0                             |
|                             |            | Westbound              | 0.05 | A   | 7.4           | 0.1                             |
|                             |            | Northbound             | 0.16 | B   | 12.1          | 0.6                             |
|                             |            | Southbound             | 0.29 | B   | 13.9          | 1.2                             |

All approaches to both Road 3E intersections currently operate at LOS C or better (and well under capacity) during the weekday AM and PM peak hours, with the exception of the westbound approach at Division Road in the weekday PM peak hour. This movement is currently operating at LOS D with a volume-to-capacity (v/c) ratio of 0.52.

## 3.0 Future Background Conditions

### 3.1 Future Background Traffic Volumes

Future background traffic volumes reflect the volume of traffic that is anticipated to be on the road network during the horizon years without the subject development in place. Typically this is comprised of two factors:

- The application of a growth rate to reflect general background traffic growth on the road network; and,

- The application of site-specific traffic volumes for any background developments in the immediate vicinity of the site.

Town staff have advised that there are no other background developments currently underway within the study area.

To determine future background traffic volumes, an annual background growth rate of 1% was applied to through movements on Graham Side Road. An annual growth rate of 1.5% was applied to through movements on Division Road. These rates were based on traffic volume growth information gleaned from the County Road 20 Environmental Assessment study (which derived future traffic growth rates from the County of Essex transportation model). Growth along Road 3E itself is expected to be minimal due to outside influences (since there are other higher order east-west roadways that through traffic would typically use). As a result, and to be conservative, an annual growth rate of 0.5% was applied to Road 3E through movements as well as turning movements to and from Road 3E at the Division Road and Graham Side Road intersections. The resulting future background traffic volumes for the various horizon years are illustrated in *Figure 4 through 8*.

Figure 4: Future Background Traffic Volumes (2019)

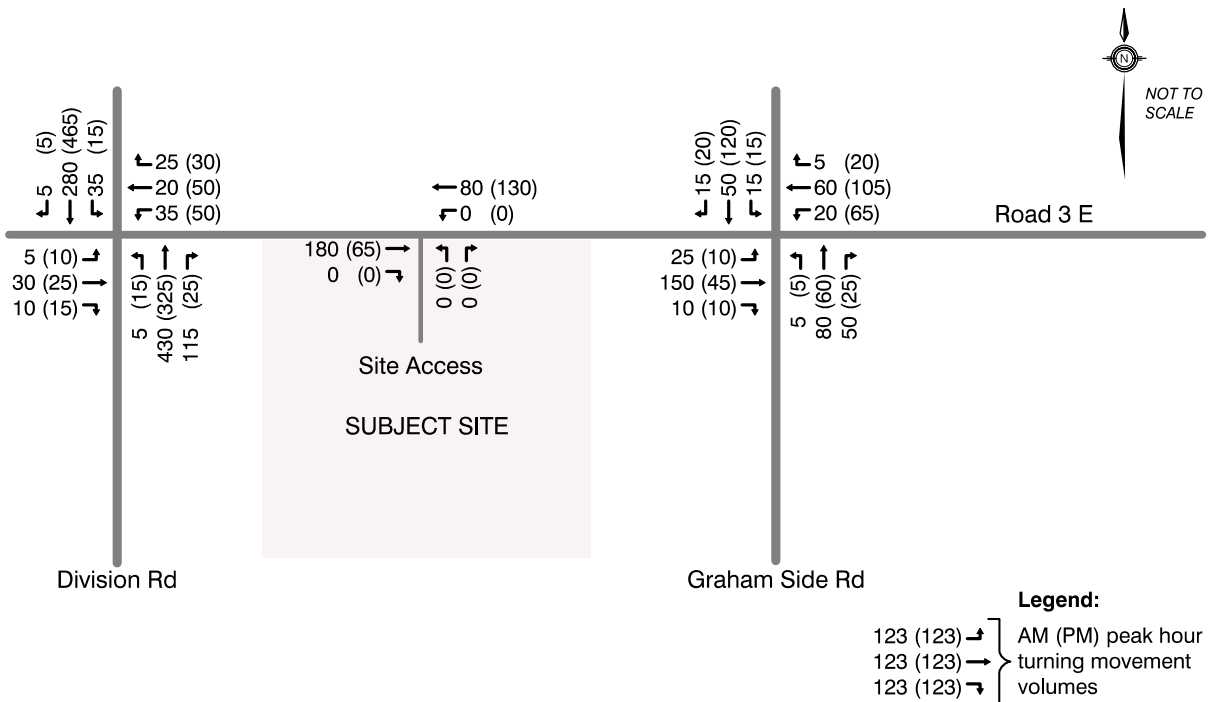


Figure 5: Future Background Traffic Volumes (2020)

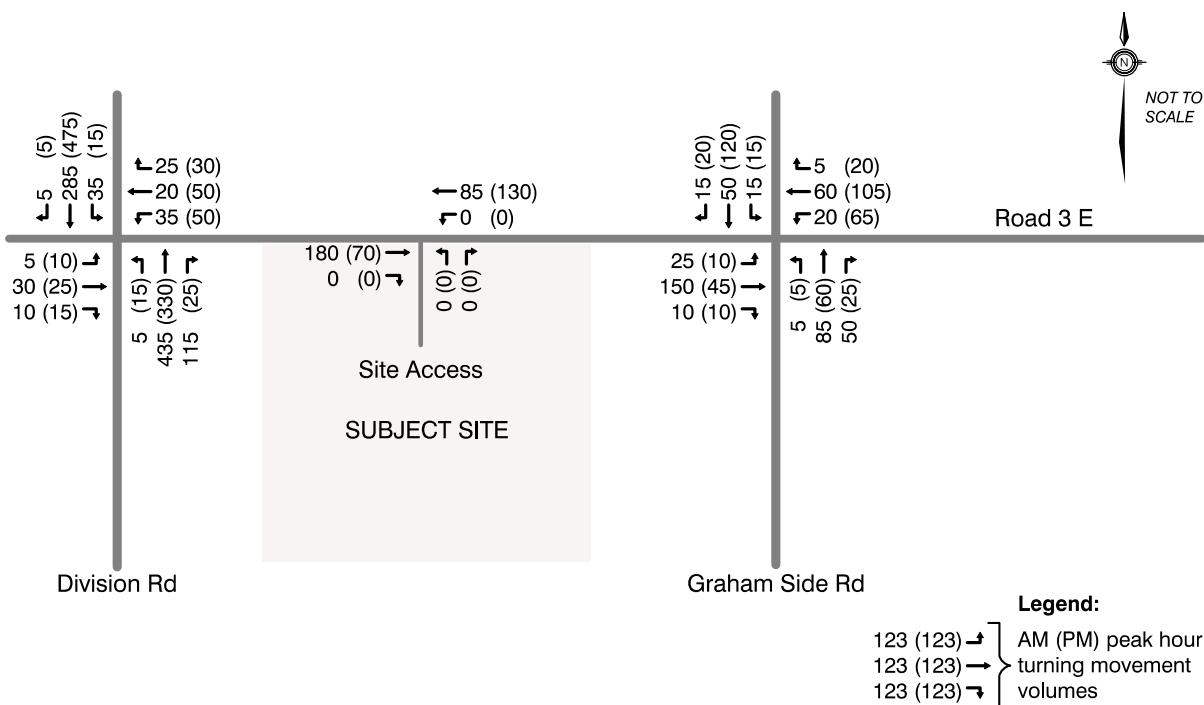


Figure 6: Future Background Traffic Volumes (2021)

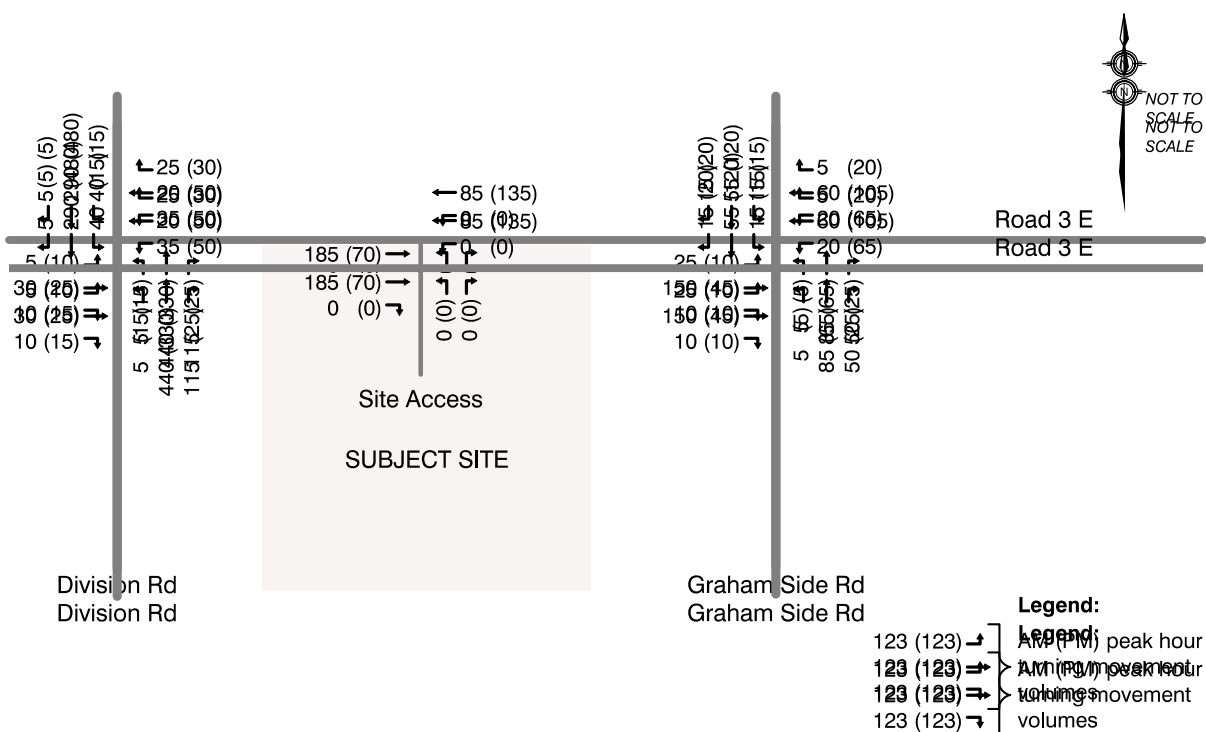


Figure 7: Future Background Traffic Volumes (2022)

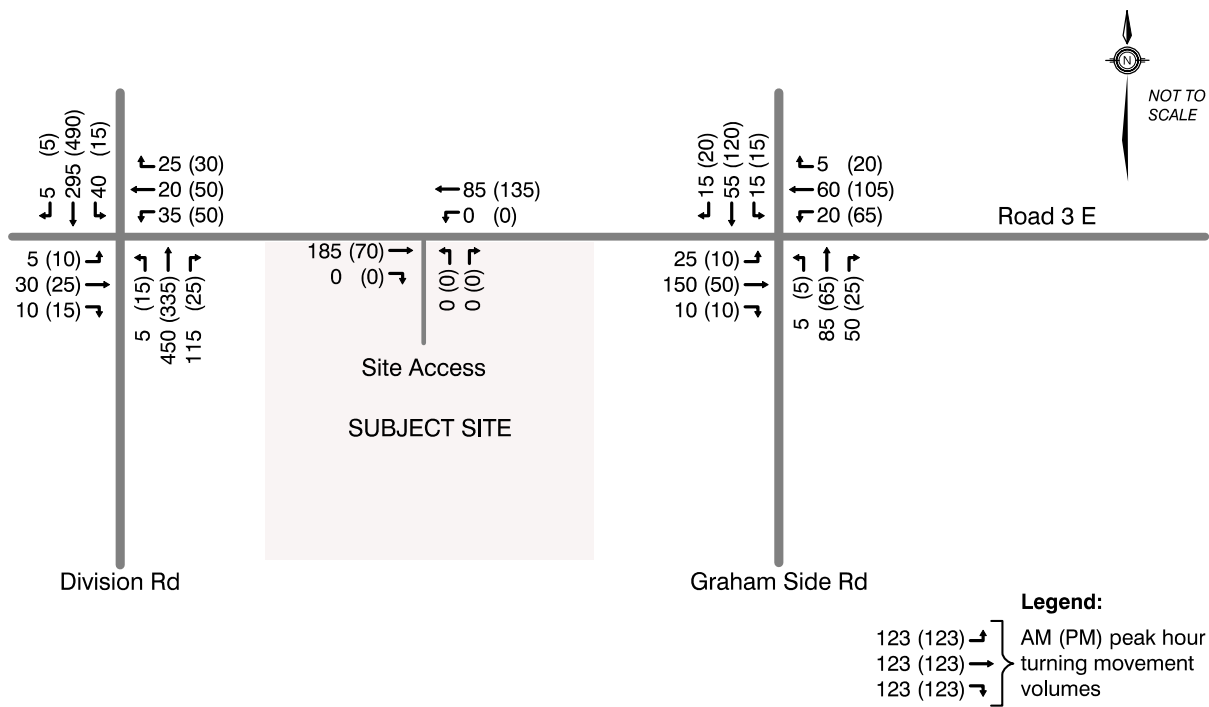
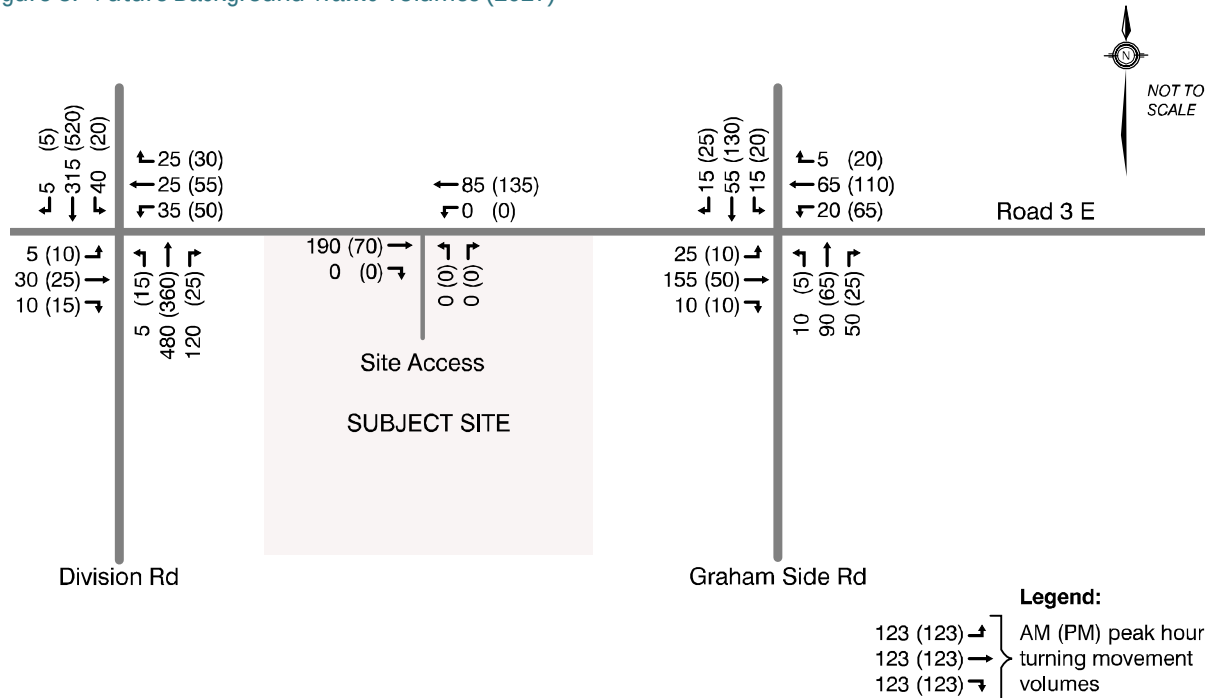


Figure 8: Future Background Traffic Volumes (2027)



### 3.2 Future Background Intersection Operations

Future background intersection operations were assessed using the same methodology as the existing conditions analyses. The analysis results are presented in *Table 2*.

Table 2: Future Background Peak Hour Intersection Operations

| Horizon Year | Intersection                | Peak hour  | Individual movement(s) |      |     |               |                                 |
|--------------|-----------------------------|------------|------------------------|------|-----|---------------|---------------------------------|
|              |                             |            | Movement               | v/c  | LOS | Delay (s/veh) | 95 <sup>th</sup> %ile queue (m) |
| 2019         | Road 3E at Division Road    | Weekday AM | Eastbound              | 0.18 | C   | 21.1          | 0.6                             |
|              |                             |            | Westbound              | 0.32 | C   | 24.4          | 1.3                             |
|              |                             |            | Northbound             | 0.00 | A   | 7.9           | 0.0                             |
|              |                             |            | Southbound             | 0.04 | A   | 8.8           | 0.1                             |
|              |                             | Weekday PM | Eastbound              | 0.20 | C   | 21.5          | 0.7                             |
|              |                             |            | Westbound              | 0.53 | D   | 32.7          | 2.9                             |
|              | Road 3E at Graham Side Road | Weekday AM | Northbound             | 0.02 | A   | 8.5           | 0.0                             |
|              |                             |            | Southbound             | 0.01 | A   | 8.1           | 0.0                             |
|              |                             |            | Eastbound              | 0.02 | A   | 7.4           | 0.1                             |
|              |                             |            | Westbound              | 0.02 | A   | 7.6           | 0.0                             |
|              |                             | Weekday PM | Northbound             | 0.23 | B   | 12.2          | 0.9                             |
|              |                             |            | Southbound             | 0.15 | B   | 12.3          | 0.5                             |
| 2020         | Road 3E at Division Road    | Weekday AM | Eastbound              | 0.01 | A   | 7.5           | 0.0                             |
|              |                             |            | Westbound              | 0.05 | A   | 7.4           | 0.1                             |
|              |                             |            | Northbound             | 0.16 | B   | 12.1          | 0.6                             |
|              |                             |            | Southbound             | 0.30 | B   | 14.1          | 1.2                             |
|              |                             | Weekday PM | Eastbound              | 0.18 | C   | 21.5          | 0.7                             |
|              |                             |            | Westbound              | 0.33 | D   | 25.0          | 1.4                             |
|              | Road 3E at Graham Side Road | Weekday AM | Northbound             | 0.00 | A   | 7.9           | 0.0                             |
|              |                             |            | Southbound             | 0.04 | A   | 8.8           | 0.1                             |
|              |                             |            | Eastbound              | 0.20 | C   | 22.0          | 0.7                             |
|              |                             |            | Westbound              | 0.54 | D   | 34.2          | 3.0                             |
|              |                             | Weekday PM | Northbound             | 0.02 | A   | 8.5           | 0.0                             |
|              |                             |            | Southbound             | 0.01 | A   | 8.1           | 0.0                             |
| 2021         | Road 3E at Division Road    | Weekday AM | Eastbound              | 0.02 | A   | 7.4           | 0.1                             |
|              |                             |            | Westbound              | 0.02 | A   | 7.6           | 0.0                             |
|              |                             |            | Northbound             | 0.24 | B   | 12.3          | 0.9                             |
|              |                             |            | Southbound             | 0.15 | B   | 12.3          | 0.5                             |
|              |                             | Weekday PM | Eastbound              | 0.01 | A   | 7.5           | 0.0                             |
|              |                             |            | Westbound              | 0.05 | A   | 7.4           | 0.1                             |
|              |                             |            | Northbound             | 0.16 | B   | 12.1          | 0.6                             |
|              |                             |            | Southbound             | 0.30 | B   | 14.1          | 1.2                             |
| 2021         | Road 3E at Division Road    | Weekday AM | Eastbound              | 0.19 | C   | 22.1          | 0.7                             |
|              |                             |            | Westbound              | 0.34 | D   | 26.0          | 1.4                             |
|              |                             |            | Northbound             | 0.00 | A   | 7.9           | 0.0                             |
|              |                             |            | Southbound             | 0.05 | A   | 8.9           | 0.1                             |
|              |                             | Weekday PM | Eastbound              | 0.21 | C   | 22.2          | 0.8                             |
|              |                             |            | Westbound              | 0.55 | D   | 34.6          | 3.0                             |
|              |                             |            | Northbound             | 0.02 | A   | 8.5           | 0.0                             |
|              |                             |            | Southbound             | 0.01 | A   | 8.1           | 0.0                             |

| Horizon Year | Intersection                | Peak hour  | Individual movement(s) |      |     |               |                                 |
|--------------|-----------------------------|------------|------------------------|------|-----|---------------|---------------------------------|
|              |                             |            | Movement               | v/c  | LOS | Delay (s/veh) | 95 <sup>th</sup> %ile queue (m) |
|              | Road 3E at Graham Side Road | Weekday AM | Eastbound              | 0.02 | A   | 7.4           | 0.1                             |
|              |                             |            | Westbound              | 0.02 | A   | 7.6           | 0.0                             |
|              |                             |            | Northbound             | 0.24 | B   | 12.3          | 0.9                             |
|              |                             |            | Southbound             | 0.17 | B   | 12.3          | 0.6                             |
|              |                             | Weekday PM | Eastbound              | 0.01 | A   | 7.5           | 0.0                             |
|              |                             |            | Westbound              | 0.05 | A   | 7.4           | 0.1                             |
|              |                             |            | Northbound             | 0.17 | B   | 12.2          | 0.6                             |
|              |                             |            | Southbound             | 0.30 | B   | 14.1          | 1.2                             |
| 2022         | Road 3E at Division Road    | Weekday AM | Eastbound              | 0.19 | C   | 22.6          | 0.7                             |
|              |                             |            | Westbound              | 0.35 | D   | 26.8          | 1.5                             |
|              |                             |            | Northbound             | 0.00 | A   | 7.9           | 0.0                             |
|              |                             |            | Southbound             | 0.05 | A   | 8.9           | 0.1                             |
|              |                             | Weekday PM | Eastbound              | 0.21 | C   | 22.7          | 0.8                             |
|              |                             |            | Westbound              | 0.56 | E   | 36.1          | 3.1                             |
|              |                             |            | Northbound             | 0.02 | A   | 8.6           | 0.0                             |
|              |                             |            | Southbound             | 0.01 | A   | 8.1           | 0.0                             |
|              | Road 3E at Graham Side Road | Weekday AM | Eastbound              | 0.02 | A   | 7.4           | 0.1                             |
|              |                             |            | Westbound              | 0.02 | A   | 7.6           | 0.0                             |
|              |                             | Weekday PM | Northbound             | 0.24 | B   | 12.3          | 0.9                             |
|              |                             |            | Southbound             | 0.16 | B   | 12.4          | 0.6                             |
| 2027         | Road 3E at Division Road    | Weekday AM | Eastbound              | 0.21 | C   | 24.7          | 0.8                             |
|              |                             |            | Westbound              | 0.41 | D   | 31.1          | 1.8                             |
|              |                             |            | Northbound             | 0.00 | A   | 8.0           | 0.0                             |
|              |                             |            | Southbound             | 0.05 | A   | 9.0           | 0.1                             |
|              |                             | Weekday PM | Eastbound              | 0.24 | D   | 25.7          | 0.9                             |
|              |                             |            | Westbound              | 0.65 | E   | 46.8          | 4.0                             |
|              |                             |            | Northbound             | 0.02 | A   | 8.7           | 0.1                             |
|              |                             |            | Southbound             | 0.02 | A   | 8.2           | 0.1                             |
|              | Road 3E at Graham Side Road | Weekday AM | Eastbound              | 0.02 | A   | 7.4           | 0.1                             |
|              |                             |            | Westbound              | 0.02 | A   | 7.6           | 0.0                             |
|              |                             | Weekday PM | Northbound             | 0.26 | B   | 12.8          | 1.0                             |
|              |                             |            | Southbound             | 0.16 | B   | 12.6          | 0.6                             |
|              | Road 3E at Graham Side Road | Weekday AM | Eastbound              | 0.02 | A   | 7.4           | 0.1                             |
|              |                             |            | Westbound              | 0.02 | A   | 7.6           | 0.0                             |
|              |                             |            | Northbound             | 0.26 | B   | 12.8          | 1.0                             |
|              |                             |            | Southbound             | 0.16 | B   | 12.6          | 0.6                             |
|              |                             | Weekday PM | Eastbound              | 0.01 | A   | 7.5           | 0.0                             |
|              |                             |            | Westbound              | 0.05 | A   | 7.5           | 0.1                             |
|              |                             |            | Northbound             | 0.17 | B   | 12.4          | 0.6                             |
|              |                             |            | Southbound             | 0.34 | B   | 14.8          | 1.5                             |

In the 2019 horizon year, all movements at the two study area intersections will continue to operate at LOS C or better during both peak hours with the exception of the westbound approach at Division Road; which will continue to operate at LOS D and have a v/c ratio of 0.53. These same operations (LOS C or better for all but one intersection movement; the weekday PM peak hour westbound approach at Division Road) will largely continue in subsequent horizon years (2020 and 2021).



In the 2022 horizon year, all intersection movements will operate at LOS C or better, with the exception of the westbound approach to the Division Road intersection. This movement will operate at LOS D during the AM peak hour and LOS E during the PM peak hour. During both peak hours, the westbound approach will still operate well under capacity at 0.35 in the AM peak hour and 0.56 in the PM peak hour.

In the 2027 horizon year, the eastbound movement at the Road 3E and Division Road intersection will pass the LOS C threshold during the weekday PM peak hour, and operate at LOS D, with a v/c ratio of 0.24. The westbound movement will continue to operate at LOS D and E during the AM and PM peak hours respectively, but still operate under capacity.

## 4.0 Site Traffic

### 4.1 Proposed Development

The proposed site plan is presented in *Appendix A*. The subject site is currently agricultural farm land. The development proposal consists of 102 greenhouses, 2 warehouses, and a bunkhouse which can hold up to 120 persons (who work and reside on-site). A parking lot containing approximately 117 parking spaces is envisioned.

The site will have two driveways. The main site driveway (located to the east) will provide access for employees who drive to the site, as well as trucks which come to the site to pick up finished goods (cannabis) and bring site supplies (e.g., fertilizer). The western site driveway will function to provide access to the bunkhouse. Buses will use this driveway to pick-up and drop-off bunkhouse residents once a week (typically on Friday evenings). These buses (anticipated to be no more than 6 in total) will transport bunkhouse workers into Kingsville to allow them to purchase groceries and supplies, and to do banking and run other miscellaneous errands. An internal connection between the western driveway and the site parking lot to the east will exist, but is not expected to be heavily used by vehicles.

While most migrant workers will take advantage of the bus transportation to get to/from town on Friday evenings, there will still be some workers who choose to travel into town on their own on other evenings/nights. Many of these workers (who travel into town on non-Fridays) will travel by bicycle. To facilitate this, and minimize these workers from cycling on Road 3E, an internal private connection from the site to the south is envisioned to allow some workers to get to Road 2E near the Kratz Road intersection. Further discussion on migrant worker travel is provided in *Section 8.0*.

## 4.2 Trip Generation

The number of vehicle trips generated by the proposed development was estimated using a first principles approach. During Phase 1, there will be approximately 80 workers on site. This will consist of 40 greenhouse workers and 40 warehouse workers. Approximately 60% of the workers will drive themselves to the site. This translates into 48 vehicle trips (which will consist of 40 warehouse worker trips and 8 greenhouse worker trips). The remaining 32 greenhouse worker trips will arrive at the site by private bus.

The same 60/40 vehicle/bus split amongst workers was applied to the subsequent phases (Phases 2-4). Phase 2 and Phase 3 are expected to generate 60 additional workers (30 greenhouse and 30 warehouse workers) each. Phase 4 is envisioned to generate 50 additional workers (25 greenhouse and 25 warehouse workers). At full build-out (Phase 4), a total of 250 workers (125 greenhouse and 125 warehouse workers) are expected to be on the site.

In addition to trips made to the site by workers, there will be some trucks that will travel to/from the site. A maximum of two (2) tractor-trailer trucks will arrive at the site on a daily basis to bring greenhouse supplies (e.g., fertilizer). Once Phase 3 is constructed, this will increase to three (3) tractor-trailer truck trips per day. At full build-out (Phase 4), the number of tractor-trailer truck trips per day will be a maximum of four (4). These truck trips will likely occur outside of the typical weekday AM and PM peak hours (i.e., late morning or early afternoon).

Courier trucks will arrive on site to pick up finished product (cannabis). Phase 1 is expected to generate six (6) courier trucks a day. These trucks will tend to arrive at varying times of the day. For analysis purposes, it was assumed that two of the trucks arrive and depart during the weekday AM peak hour, two of them arrive and depart during the weekday PM peak hour, and the remaining two arrive and depart the site at times in between the peak hours. Once Phase 2 is completed, the number of daily courier trucks will increase to eight (8). Phase 3 will generate an additional two trucks, bringing the daily total to 10 trucks. At full build-out (Phase 4), there will be 12 courier trucks on site on a daily basis.

*Table 3* summarizes the number of trips that are expected to be generated by the development.

Table 3: Trip Generation

| Phase       | Trip Type            | Magnitude              | Mode of Travel | Weekday AM Peak Hour |     |       | Weekday PM Peak Hour |     |       |
|-------------|----------------------|------------------------|----------------|----------------------|-----|-------|----------------------|-----|-------|
|             |                      |                        |                | In                   | Out | Total | In                   | Out | Total |
| 1           | Warehouse Employees  | 40 workers             | Vehicle        | 40                   | 0   | 40    | 0                    | 40  | 40    |
|             | Greenhouse Employees | 8 workers              | Vehicle        | 8                    | 0   | 8     | 0                    | 8   | 8     |
|             |                      | 32 workers             | Bus            | 1                    | 0   | 1     | 0                    | 1   | 1     |
|             | Courier Trucks       | 2 trucks per peak hour | Truck          | 2                    | 2   | 4     | 2                    | 2   | 4     |
|             | Phase 1 Totals       |                        |                | 51                   | 2   | 53    | 2                    | 51  | 53    |
| 2           | Warehouse Employees  | 30 workers             | Vehicle        | 30                   | 0   | 30    | 0                    | 30  | 30    |
|             | Greenhouse Employees | 6 workers              | Vehicle        | 6                    | 0   | 6     | 0                    | 6   | 6     |
|             |                      | 24 workers             | Bus            | 1                    | 0   | 1     | 0                    | 1   | 1     |
|             | Courier Trucks       | 1 truck per peak hour  | Truck          | 1                    | 1   | 2     | 1                    | 1   | 2     |
|             | Phase 2 Totals       |                        |                | 38                   | 1   | 39    | 1                    | 38  | 39    |
| 3           | Warehouse Employees  | 30 workers             | Vehicle        | 30                   | 0   | 30    | 0                    | 30  | 30    |
|             | Greenhouse Employees | 6 workers              | Vehicle        | 6                    | 0   | 6     | 0                    | 6   | 6     |
|             |                      | 24 workers             | Bus            | 1                    | 0   | 1     | 0                    | 1   | 1     |
|             | Courier Trucks       | 1 truck per peak hour  | Truck          | 1                    | 1   | 2     | 1                    | 1   | 2     |
|             | Phase 3 Totals       |                        |                | 38                   | 1   | 39    | 1                    | 38  | 39    |
| 4           | Warehouse Employees  | 25 workers             | Vehicle        | 25                   | 0   | 25    | 0                    | 25  | 25    |
|             | Greenhouse Employees | 5 workers              | Vehicle        | 5                    | 0   | 5     | 0                    | 5   | 5     |
|             |                      | 20 workers             | Bus            | 1                    | 0   | 1     | 0                    | 1   | 1     |
|             | Courier Trucks       | 1 truck per peak hour  | Truck          | 1                    | 1   | 2     | 1                    | 1   | 2     |
|             | Phase 4 Totals       |                        |                | 32                   | 1   | 33    | 1                    | 32  | 33    |
| Site Totals |                      |                        |                | 159                  | 5   | 164   | 5                    | 159 | 164   |

Upon full build-out, the proposed development is anticipated to generate approximately 164 trips during both the weekday AM and PM peak hours.

### 4.3 Trip Distribution and Assignment

Employee vehicle trips were distributed based on information provided by Mucci Farms regarding the anticipated origins of site workers. For workers that will drive to the site, it was assumed that:

- 30% will be from Kingsville;
- 30% will be from Leamington; and,
- 40% will be from other communities.

Workers residing in Kingsville were assumed to take Division Road north and make the right turn on to Road 3E to access the site.

For workers residing in Leamington, 80% were assumed to approach the site on Road 3E in the westbound direction from east of Graham Side Road. The remaining 20% would approach the site from the south and make the northbound left turn on to Road 3E from Graham Side Road.

For workers residing in other communities (which constitutes the remaining 40%), the following was assumed:

- 70% (28%) will be from areas to the northwest (e.g., Windsor, Essex, Tecumseh, LaSalle);
- 15% (6%) will be from areas to the west (e.g., Amherstburg, Harrow); and
- 15% (6%) will be from areas to the northeast (e.g., Tilbury, Chatham).

Workers from areas to the northwest were assumed to arrive at the site via a southbound left turn on to Road 3E from Division Road.

Of the workers from the communities to the west, 75% were assumed to travel south of Division Road and make the southbound left turn on to Road 3E to access the site. The remaining 25% were assumed to travel north on Division Road and make the northbound right turn on to Road 3E to access the site.

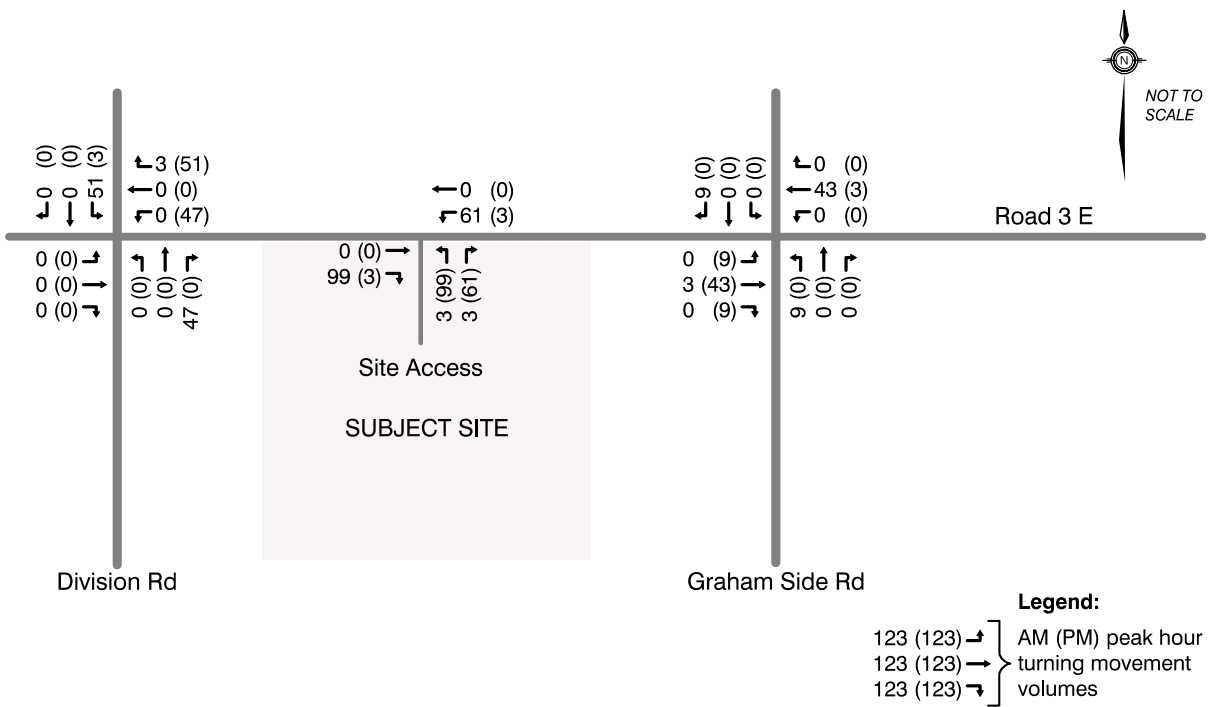
Workers from areas to the northeast were assumed to travel down Graham Side Road and make the southbound right turn on to Road 3E to access the site.

Buses carrying greenhouse employees are likely to come from the Leamington area (to the east). It was assumed that these buses will approach the site on Road 3E in the westbound direction from east of Graham Side Road.

Courier trucks which will pick up finished product from the site are envisioned to originate from Leamington as well as the Windsor area. This split was assumed to be 50/50, based on information provided by Mucci Farms. The courier trucks that originate from Leamington will travel westbound on Road 3E from east of Graham Side Road to access the site. The other courier trucks (originating from the Windsor area) are expected to travel down Highway 3 and turn south on to Division Road. From there, they will proceed south and make the southbound left turn on to Road 3E to access the site.

*Figure 9* illustrates the intersection traffic volumes projected to be generated by the site.

Figure 9: Site Traffic Volumes



## 5.0 Total Future Conditions

### 5.1 Total Future Traffic Volumes

Total future traffic volumes represent the level of traffic that would be anticipated with the full development of the site, and were calculated by adding the site traffic volumes to the projected future background traffic volumes. The resulting total future traffic volumes for the various horizon years are illustrated in *Figure 10 through Figure 14*.

Figure 10: Total Future Traffic Volumes (2019)

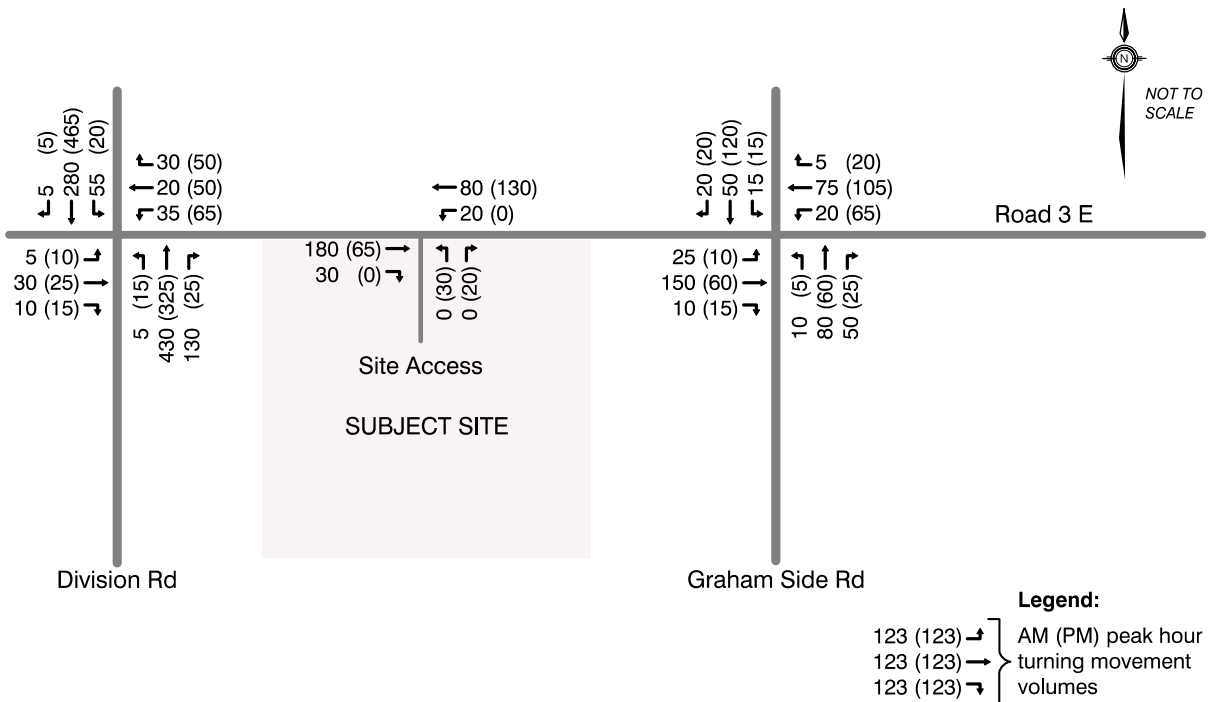


Figure 11: Total Future Traffic Volumes (2020)

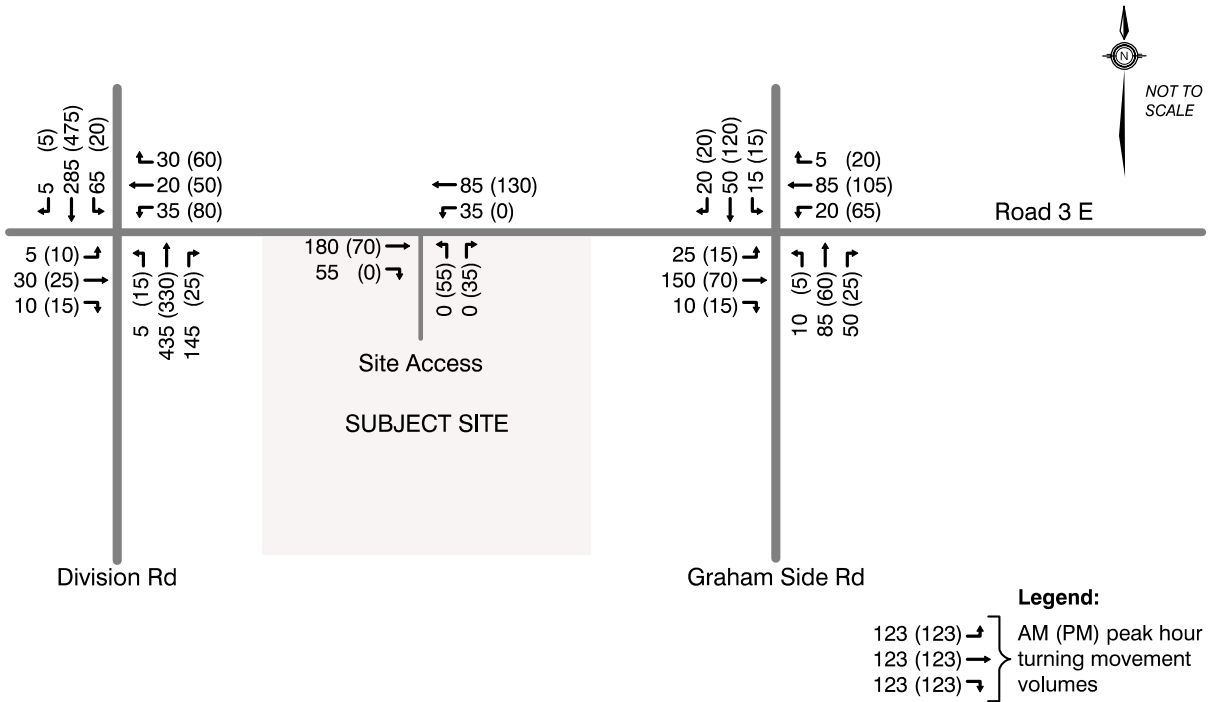


Figure 12: Total Future Traffic Volumes (2021)

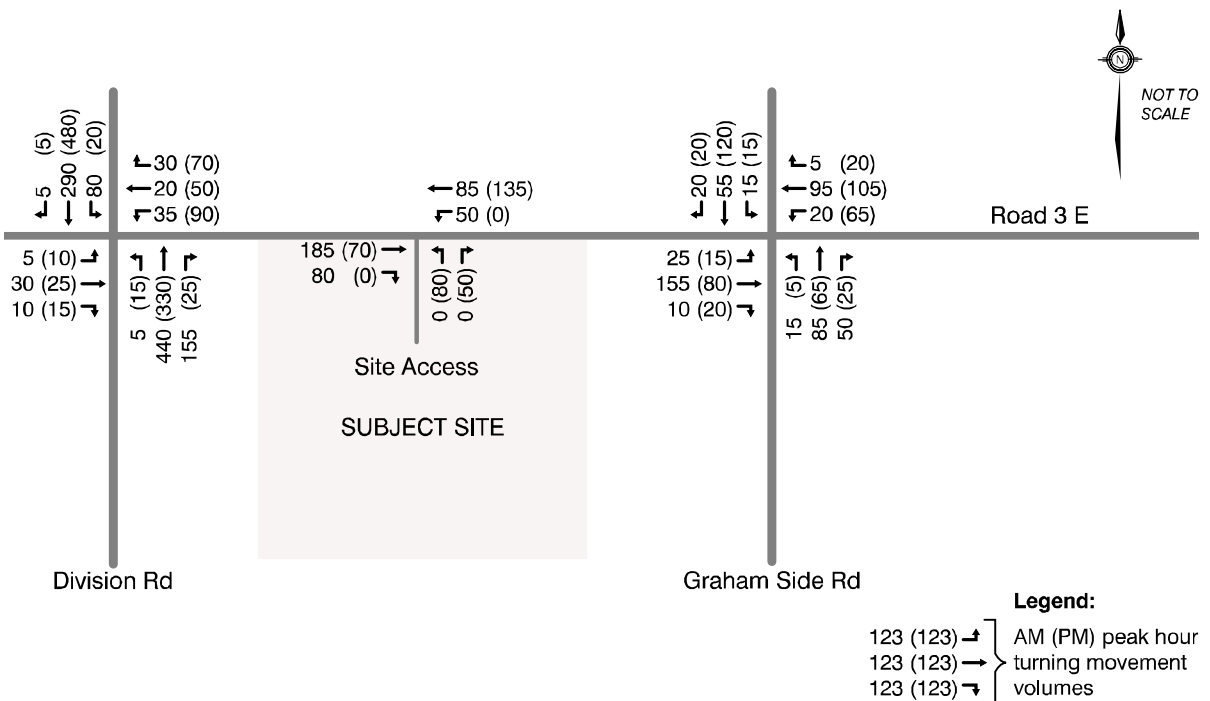


Figure 13: Total Future Traffic Volumes (2022)

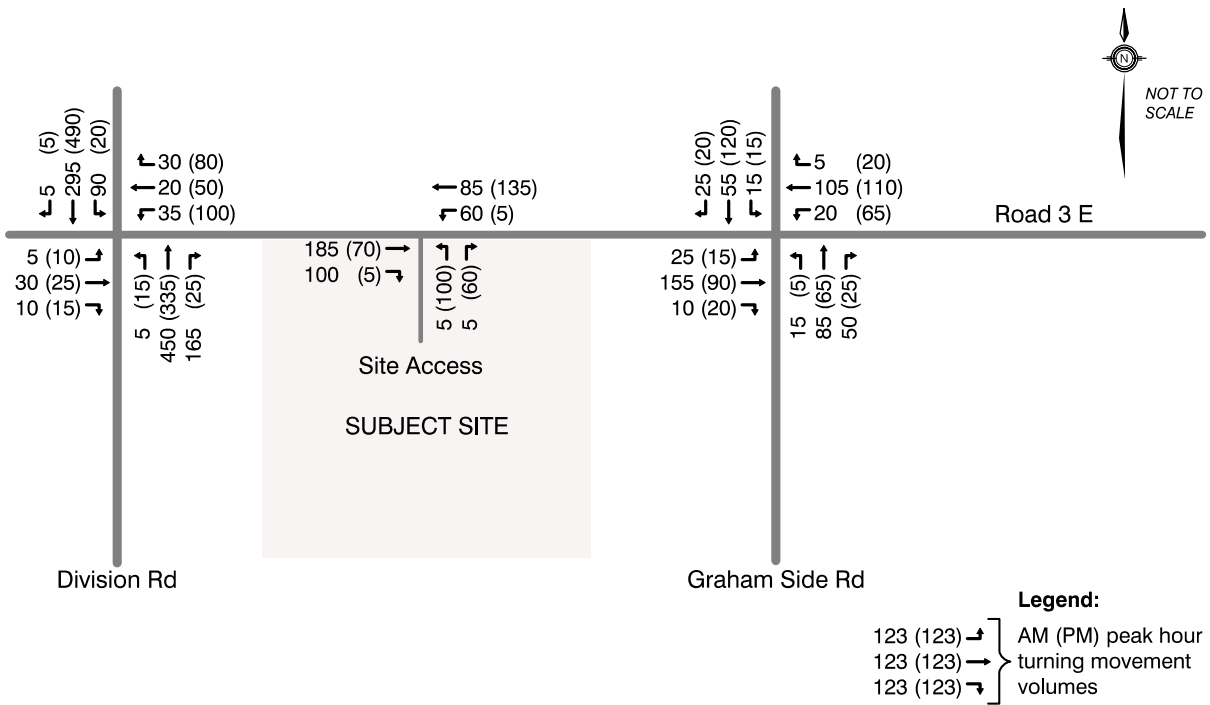
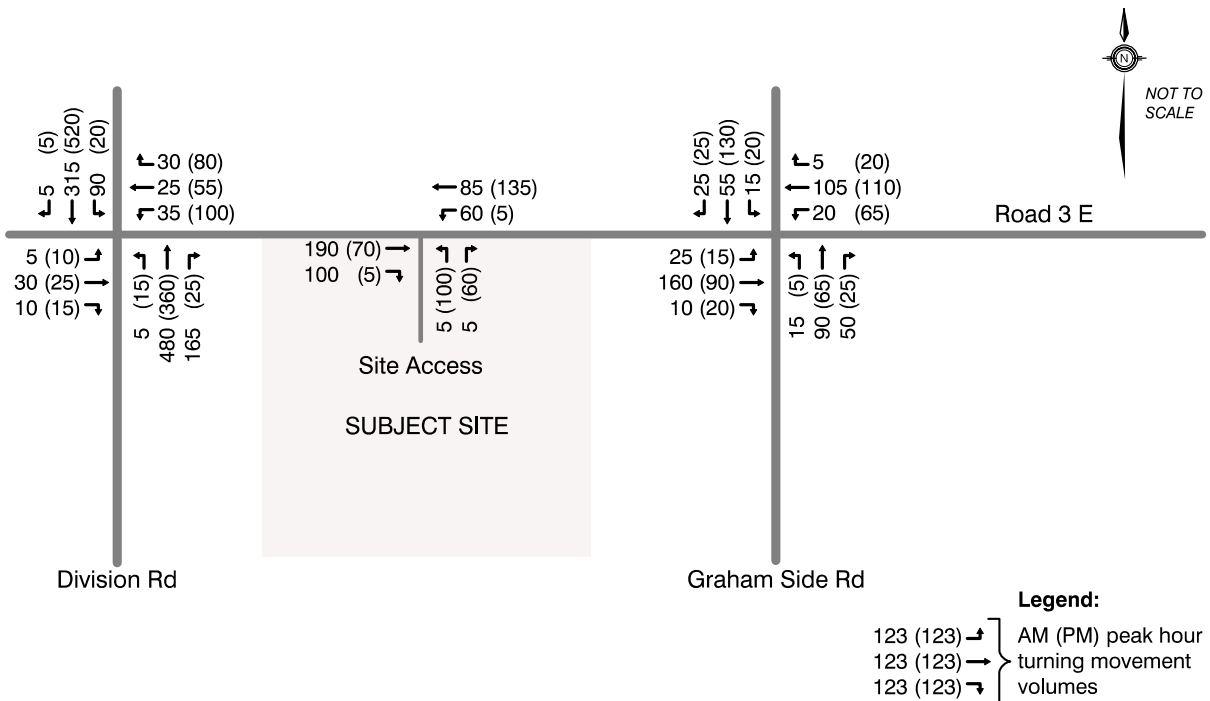


Figure 14: Total Future Traffic Volumes (2027)





## 5.2 Total Future Intersection Operations

Total future intersection operations were assessed using the same methodology as the existing and future background conditions analyses. The analysis results are summarized in *Table 4*.

Table 4: Total Future Peak Hour Intersection Operations

| Horizon Year | Intersection                | Peak hour  | Individual movement(s) |      |     |               |                                 |
|--------------|-----------------------------|------------|------------------------|------|-----|---------------|---------------------------------|
|              |                             |            | Movement               | v/c  | LOS | Delay (s/veh) | 95 <sup>th</sup> %ile queue (m) |
| 2019         | Road 3E at Division Road    | Weekday AM | Eastbound              | 0.20 | C   | 23.3          | 0.7                             |
|              |                             |            | Westbound              | 0.35 | D   | 27.4          | 1.5                             |
|              |                             |            | Northbound             | 0.00 | A   | 7.9           | 0.0                             |
|              |                             |            | Southbound             | 0.06 | A   | 9.0           | 0.2                             |
|              |                             | Weekday PM | Eastbound              | 0.21 | C   | 22.2          | 0.8                             |
|              |                             |            | Westbound              | 0.66 | E   | 40.0          | 4.2                             |
|              |                             |            | Northbound             | 0.02 | A   | 8.5           | 0.0                             |
|              |                             |            | Southbound             | 0.02 | A   | 8.1           | 0.1                             |
|              | Road 3E at Graham Side Road | Weekday AM | Eastbound              | 0.02 | A   | 7.4           | 0.1                             |
|              |                             |            | Westbound              | 0.02 | A   | 7.6           | 0.0                             |
|              |                             |            | Northbound             | 0.24 | B   | 12.5          | 0.9                             |
|              |                             |            | Southbound             | 0.16 | B   | 12.3          | 0.6                             |
|              |                             | Weekday PM | Eastbound              | 0.01 | A   | 7.5           | 0.0                             |
|              |                             |            | Westbound              | 0.05 | A   | 7.5           | 0.1                             |
|              |                             |            | Northbound             | 0.17 | B   | 12.3          | 0.6                             |
|              |                             |            | Southbound             | 0.31 | B   | 14.4          | 1.3                             |
| 2020         | Road 3E at Division Road    | Weekday AM | Eastbound              | 0.22 | D   | 25.3          | 0.8                             |
|              |                             |            | Westbound              | 0.38 | D   | 30.2          | 1.7                             |
|              |                             |            | Northbound             | 0.00 | A   | 7.9           | 0.0                             |
|              |                             |            | Southbound             | 0.07 | A   | 9.1           | 0.2                             |
|              |                             | Weekday PM | Eastbound              | 0.21 | C   | 23.0          | 0.8                             |
|              |                             |            | Westbound              | 0.77 | F   | 52.4          | 5.8                             |
|              |                             |            | Northbound             | 0.02 | A   | 8.5           | 0.0                             |
|              |                             |            | Southbound             | 0.02 | A   | 8.1           | 0.1                             |
|              | Road 3E at Graham Side Road | Weekday AM | Eastbound              | 0.02 | A   | 7.5           | 0.1                             |
|              |                             |            | Westbound              | 0.02 | A   | 7.6           | 0.0                             |
|              |                             |            | Northbound             | 0.25 | B   | 12.8          | 1.0                             |
|              |                             |            | Southbound             | 0.16 | B   | 12.5          | 0.6                             |
|              |                             | Weekday PM | Eastbound              | 0.01 | A   | 7.5           | 0.0                             |
|              |                             |            | Westbound              | 0.05 | A   | 7.5           | 0.1                             |
|              |                             |            | Northbound             | 0.17 | B   | 12.6          | 0.6                             |
|              |                             |            | Southbound             | 0.32 | B   | 14.8          | 1.3                             |
| 2021         | Road 3E at Division Road    | Weekday AM | Eastbound              | 0.24 | D   | 27.7          | 0.9                             |
|              |                             |            | Westbound              | 0.43 | D   | 33.6          | 2.0                             |
|              |                             |            | Northbound             | 0.00 | A   | 7.9           | 0.0                             |
|              |                             |            | Southbound             | 0.09 | A   | 9.2           | 0.3                             |
|              |                             | Weekday PM | Eastbound              | 0.22 | C   | 23.4          | 0.8                             |
|              |                             |            | Westbound              | 0.85 | F   | 64.2          | 7.1                             |
|              |                             |            | Northbound             | 0.02 | A   | 8.5           | 0.0                             |
|              |                             |            | Southbound             | 0.02 | A   | 8.1           | 0.1                             |

| Horizon Year | Intersection                | Peak hour  | Individual movement(s) |      |     |               |                                 |
|--------------|-----------------------------|------------|------------------------|------|-----|---------------|---------------------------------|
|              |                             |            | Movement               | v/c  | LOS | Delay (s/veh) | 95 <sup>th</sup> %ile queue (m) |
|              | Road 3E at Graham Side Road | Weekday AM | Eastbound              | 0.02 | A   | 7.5           | 0.1                             |
|              |                             |            | Westbound              | 0.02 | A   | 7.6           | 0.0                             |
|              |                             |            | Northbound             | 0.27 | B   | 13.2          | 1.1                             |
|              |                             |            | Southbound             | 0.18 | B   | 12.8          | 0.6                             |
|              |                             | Weekday PM | Eastbound              | 0.01 | A   | 7.5           | 0.0                             |
|              |                             |            | Westbound              | 0.05 | A   | 7.6           | 0.1                             |
|              |                             |            | Northbound             | 0.19 | B   | 12.9          | 0.7                             |
|              |                             |            | Southbound             | 0.32 | C   | 15.1          | 1.4                             |
| 2022         | Road 3E at Division Road    | Weekday AM | Eastbound              | 0.26 | D   | 30.4          | 1.0                             |
|              |                             |            | Westbound              | 0.46 | E   | 37.9          | 2.2                             |
|              |                             |            | Northbound             | 0.00 | A   | 7.9           | 0.0                             |
|              |                             |            | Southbound             | 0.11 | A   | 9.4           | 0.4                             |
|              |                             | Weekday PM | Eastbound              | 0.23 | C   | 24.1          | 0.8                             |
|              |                             |            | Westbound              | 0.94 | F   | 81.9          | 8.7                             |
|              |                             |            | Northbound             | 0.02 | A   | 8.6           | 0.0                             |
|              |                             |            | Southbound             | 0.02 | A   | 8.1           | 0.1                             |
|              | Road 3E at Graham Side Road | Weekday AM | Eastbound              | 0.02 | A   | 7.5           | 0.1                             |
|              |                             |            | Westbound              | 0.02 | A   | 7.6           | 0.0                             |
|              |                             |            | Northbound             | 0.27 | B   | 13.3          | 1.1                             |
|              |                             |            | Southbound             | 0.18 | B   | 12.9          | 0.7                             |
|              |                             | Weekday PM | Eastbound              | 0.01 | A   | 7.5           | 0.0                             |
|              |                             |            | Westbound              | 0.05 | A   | 7.6           | 0.2                             |
|              |                             |            | Northbound             | 0.19 | B   | 13.1          | 0.7                             |
|              |                             |            | Southbound             | 0.33 | C   | 15.5          | 1.4                             |
| 2027         | Road 3E at Division Road    | Weekday AM | Eastbound              | 0.28 | D   | 33.6          | 1.1                             |
|              |                             |            | Westbound              | 0.53 | E   | 47.0          | 2.7                             |
|              |                             |            | Northbound             | 0.00 | A   | 8.0           | 0.0                             |
|              |                             |            | Southbound             | 0.11 | A   | 9.5           | 0.4                             |
|              |                             | Weekday PM | Eastbound              | 0.25 | D   | 27.0          | 1.0                             |
|              |                             |            | Westbound              | 1.06 | F   | 118.9         | 10.7                            |
|              |                             |            | Northbound             | 0.02 | A   | 8.7           | 0.1                             |
|              |                             |            | Southbound             | 0.02 | A   | 8.2           | 0.1                             |
|              | Road 3E at Graham Side Road | Weekday AM | Eastbound              | 0.02 | A   | 7.5           | 0.1                             |
|              |                             |            | Westbound              | 0.02 | A   | 7.6           | 0.0                             |
|              |                             |            | Northbound             | 0.29 | B   | 13.6          | 1.2                             |
|              |                             |            | Southbound             | 0.19 | B   | 13.0          | 0.7                             |
|              |                             | Weekday PM | Eastbound              | 0.01 | A   | 7.5           | 0.0                             |
|              |                             |            | Westbound              | 0.05 | A   | 7.6           | 0.2                             |
|              |                             |            | Northbound             | 0.19 | B   | 13.1          | 0.7                             |
|              |                             |            | Southbound             | 0.37 | C   | 16.1          | 1.7                             |

With the introduction of site traffic, all approaches to the Road 3E and Graham Side Road intersection will continue to operate at LOS C or better.

At the Road 3E and Division Road intersection, the westbound approach will experience increasing delays during the future horizon years. During the PM peak hour – the more critical of the two peak hours for the westbound approach – the westbound approach will gradually increase from LOS E and a

v/c ratio of 0.66 in 2019 to LOS F and a v/c ratio of 1.06 in 2027. In 2027, the westbound approach will also reach LOS E in the AM peak hour, but still operate under capacity ( $v/c = 0.53$ ).

To address the anticipated future capacity issues on the westbound approach at Road 3E and Division Road, two forms of mitigation were examined: the implementation of a westbound left turn lane and signalization of the intersection.

By constructing a westbound left turn lane at the intersection, the v/c ratio for the westbound left turn movement would be 0.65 and the westbound shared through / right turn movement would be 0.41. The level of service on the westbound left turn movement would still be high at LOS F, but the westbound through / right turn movement would operate at LOS C. Even though the movements will operate within capacity, the expected level of service is less than desirable. Before commencing with this alternative form of mitigation, some additional investigation would be required to determine the feasibility of constructing this lane as it relates to lane alignment through the intersection and the potential impact to roadside drainage facilities, property, and other infrastructure. The right-of-way on Road 3E appears to be around 17 metres while the right-of-way on Road 3W (the west leg of the intersection) is approximately 20 metres.

Signalization of the intersection was also considered. If the intersection was signalized, it would operate at LOS B overall during the weekday PM peak hour in 2027. The v/c ratio on the westbound approach would be around 0.47 (depending on the ultimate signal timings implemented). All other intersection approaches could operate well within capacity under signalized conditions.

To confirm whether traffic control signals are warranted, signal warrant calculations have been completed. Given that 8 hours of turning movement count were not available, the turning movement count data that was collected for the purposes of operational analyses at the intersection was used in conjunction with the Transportation Association of Canada (TAC) signal warrant methodology (which is based on 6 hours of traffic count data). These calculations found that the intersection would not warrant signalization under either existing conditions or five years beyond full build out (2027). *Appendix E* contains the signal warrant calculations.

Given that signals are not warranted at the Road 3E and Division Road intersection, a westbound left turn lane should be considered to mitigate operations on the westbound approach in the future.

Left turn lane warrants were also completed for the northbound and southbound approaches to the Road 3E and Division Road intersection and the eastbound and westbound approaches to the Road 3E and Graham Side Road intersection. *Table 5* summarizes the findings of the left turn lane warrant analyses for the total future horizon year of 2027.

Table 5: Left Turn Lane Warrant Analyses (2027)

|                                     | Road 3E<br>at Division Road |         |              |         | Road 3E at<br>Graham Side Road |         |              |         |
|-------------------------------------|-----------------------------|---------|--------------|---------|--------------------------------|---------|--------------|---------|
|                                     | AM Peak Hour                |         | PM Peak Hour |         | AM Peak Hour                   |         | PM Peak Hour |         |
| Movement                            | SB left                     | NB left | SB left      | NB left | EB left                        | WB left | EB left      | WB left |
| Design speed                        | 80 km/h                     |         |              |         |                                |         |              |         |
| Advancing volume,<br>$V_A$ (vph)    | 410                         | 655     | 550          | 405     | 190                            | 130     | 130          | 200     |
| Left turn volume,<br>$V_{LT}$ (vph) | 90                          | 5       | 20           | 15      | 25                             | 20      | 15           | 65      |
| % left turns in $V_A$               | 22%                         | 1%      | 4%           | 4%      | 13%                            | 15%     | 12%          | 33%     |
| Opposing volume,<br>$V_O$ (vph)     | 655                         | 410     | 405          | 550     | 130                            | 190     | 200          | 130     |
| Left turn lane<br>warranted?        | Yes                         | No      | Yes          | Yes     | No                             | No      | No           | No      |
| Storage length                      | 30 m                        | N/A     | 15 m         | 15 m    | N/A                            | N/A     | N/A          | N/A     |

The left turn lane warrant analyses found that both a southbound left turn lane and northbound left turn lane would be warranted in the ultimate horizon year of 2027 at the Road 3E and Division Road intersection. No left turn lanes were found to be warranted at the Road 3E and Graham Side Road intersection.

It was further found that the southbound left turn lane is warranted at the Road 3E and Division Road intersection based on existing (2018) volumes.

Total future conditions at the main site driveway are summarized in *Table 6*. The western site driveway will only be used by buses that transport bunkhouse residents to/from town at the end of each week, and therefore will see very limited usage. These buses make these trips after the weekday PM peak hour on Fridays when traffic volumes are lessened on Road 3E and the surrounding road network.

Table 6: Total Future Driveway Operations

| Horizon Year | Peak hour  | Individual movement(s) |      |     |               |                                 |
|--------------|------------|------------------------|------|-----|---------------|---------------------------------|
|              |            | Movement               | v/c  | LOS | Delay (s/veh) | 95 <sup>th</sup> %ile queue (m) |
| 2019         | Weekday AM | Eastbound              | 0.00 | A   | 0.0           | 0.0                             |
|              |            | Westbound              | 0.02 | A   | 7.7           | 0.0                             |
|              |            | Northbound             | 0.00 | A   | 0.0           | 0.0                             |
|              | Weekday PM | Eastbound              | 0.00 | A   | 0.0           | 0.0                             |
|              |            | Westbound              | 0.00 | A   | 0.0           | 0.0                             |
|              |            | Northbound             | 0.06 | A   | 9.5           | 0.2                             |
| 2020         | Weekday AM | Eastbound              | 0.00 | A   | 0.0           | 0.0                             |
|              |            | Westbound              | 0.03 | A   | 7.8           | 0.1                             |
|              |            | Northbound             | 0.00 | A   | 0.0           | 0.0                             |
|              | Weekday PM | Eastbound              | 0.00 | A   | 0.0           | 0.0                             |
|              |            | Westbound              | 0.00 | A   | 0.0           | 0.0                             |
|              |            | Northbound             | 0.12 | A   | 9.8           | 0.4                             |
| 2021         | Weekday AM | Eastbound              | 0.00 | A   | 0.0           | 0.0                             |
|              |            | Westbound              | 0.04 | A   | 8.0           | 0.1                             |
|              |            | Northbound             | 0.00 | A   | 0.0           | 0.0                             |
|              | Weekday PM | Eastbound              | 0.00 | A   | 0.0           | 0.0                             |
|              |            | Westbound              | 0.00 | A   | 0.0           | 0.0                             |
|              |            | Northbound             | 0.17 | B   | 10.2          | 0.6                             |
| 2022         | Weekday AM | Eastbound              | 0.00 | A   | 0.0           | 0.0                             |
|              |            | Westbound              | 0.05 | A   | 8.0           | 0.2                             |
|              |            | Northbound             | 0.02 | B   | 10.9          | 0.1                             |
|              | Weekday PM | Eastbound              | 0.00 | A   | 0.0           | 0.0                             |
|              |            | Westbound              | 0.00 | A   | 7.4           | 0.0                             |
|              |            | Northbound             | 0.21 | B   | 10.6          | 0.8                             |
| 2027         | Weekday AM | Eastbound              | 0.00 | A   | 0.0           | 0.0                             |
|              |            | Westbound              | 0.05 | A   | 8.1           | 0.2                             |
|              |            | Northbound             | 0.02 | B   | 10.9          | 0.1                             |
|              | Weekday PM | Eastbound              | 0.00 | A   | 0.0           | 0.0                             |
|              |            | Westbound              | 0.00 | A   | 7.4           | 0.0                             |
|              |            | Northbound             | 0.21 | B   | 10.6          | 0.8                             |

The main site driveway is expected to operate well during both peak hours in all time horizon years. The northbound driveway approach will operate no worse than LOS B.

Given the peaking characteristics of the movements at the main site driveway, left turn lane warrant analyses were only conducted for the weekday AM peak hour (representing the highest concentration of westbound left turn movements at the driveway). In the 2027 horizon year, the westbound left turn volume, when considered in conjunction with the westbound advancing volume and eastbound opposing volume on Road 3E, would not warrant an exclusive westbound left turn lane at the main site driveway. *Table 7* summarizes these left turn lane warrant analyses.

Table 7: Left Turn Lane Warrant Analyses at Main Site Driveway (2027)

|                                  | Road 3E at<br>Main Site Driveway<br>AM Peak Hour |
|----------------------------------|--------------------------------------------------|
| Movement                         | WB left                                          |
| Design speed                     | 80 km/h                                          |
| Advancing volume, $V_A$<br>(vph) | 145                                              |
| Left turn volume, $V_{LT}$ (vph) | 60                                               |
| % left turns in $V_A$            | 41%                                              |
| Opposing volume, $V_O$ (vph)     | 285                                              |
| Left turn lane warranted?        | No                                               |
| Storage length                   | N/A                                              |

## 6.0

## Review of Site Driveways

The site plan was reviewed from the perspective of geometrics and sight lines at the proposed site driveways. Specifically, the following elements were reviewed:

- The ability to accommodate tractor-trailer truck turning movements to/from Road 3E at the main site driveway; and
- Sight lines on Road 3E at the site driveways.

## 6.1

### Truck Access at Main Site Driveway

The main site driveway is 10 metres wide while the western site driveway (servicing the bunkhouse) is 6 metres wide. The driveway corner radii are 15 metres. According to the Town of Kingsville Development Manual the maximum driveway width for a greenhouse development is 12 metres (for a two-way driveway). Both driveways do not exceed this maximum width.

The largest vehicle that would utilize the main site driveway is a tractor-trailer (WB-20) truck. Truck turning simulations, using AutoTURN, were completed at the driveway. Those turning simulations (shown in *Figure 15* and *Figure 16*) found that the proposed driveway dimensions are sufficient to accommodate this truck.

Figure 15: Inbound WB-20 Truck Movement

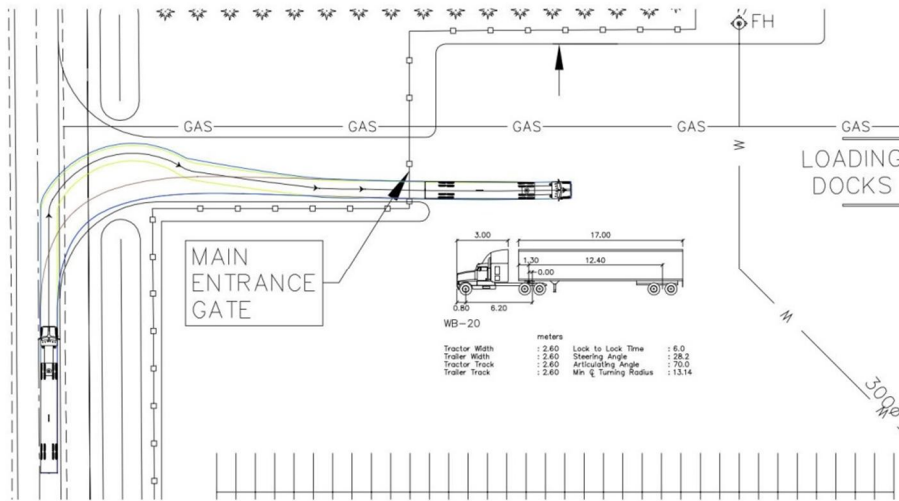
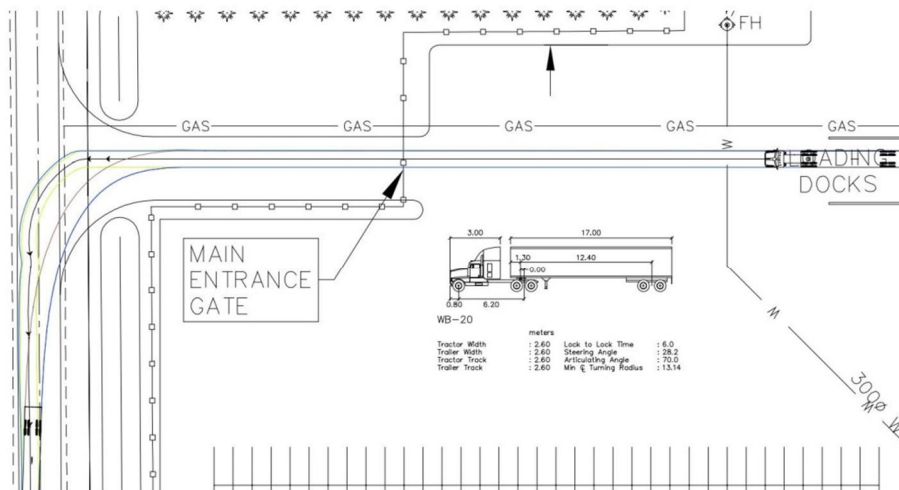


Figure 16: Outbound WB-20 Truck Movement



At the western site driveway, the largest vehicle that would access and egress the bunkhouse area would be a bus (typically a city bus). Turning simulations (shown in *Figure 17* and *Figure 18*) with a city bus found that the dimensions of the western site driveway are sufficient to accommodate this bus.

Figure 17: Inbound Bus Movement

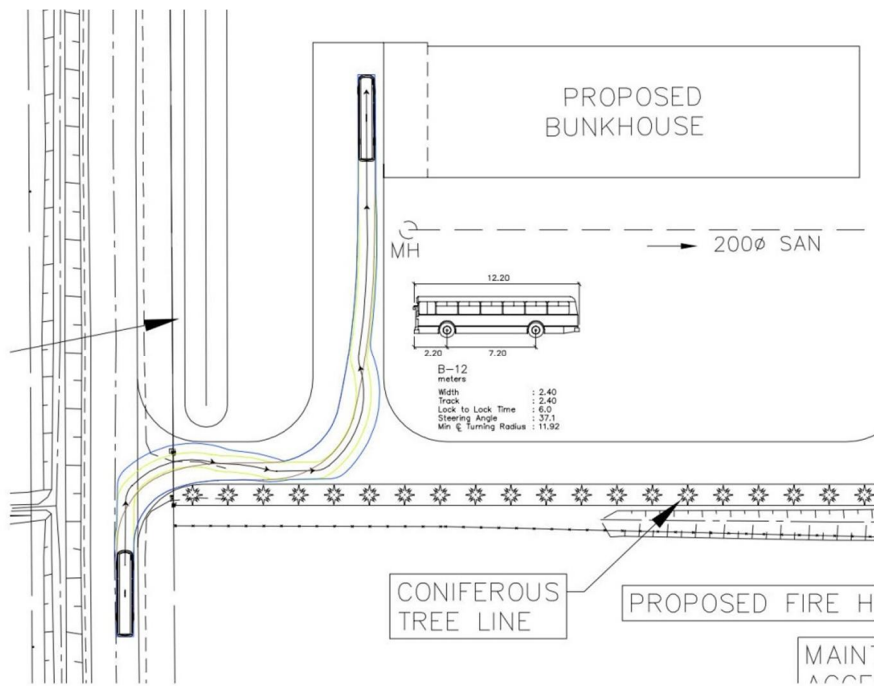
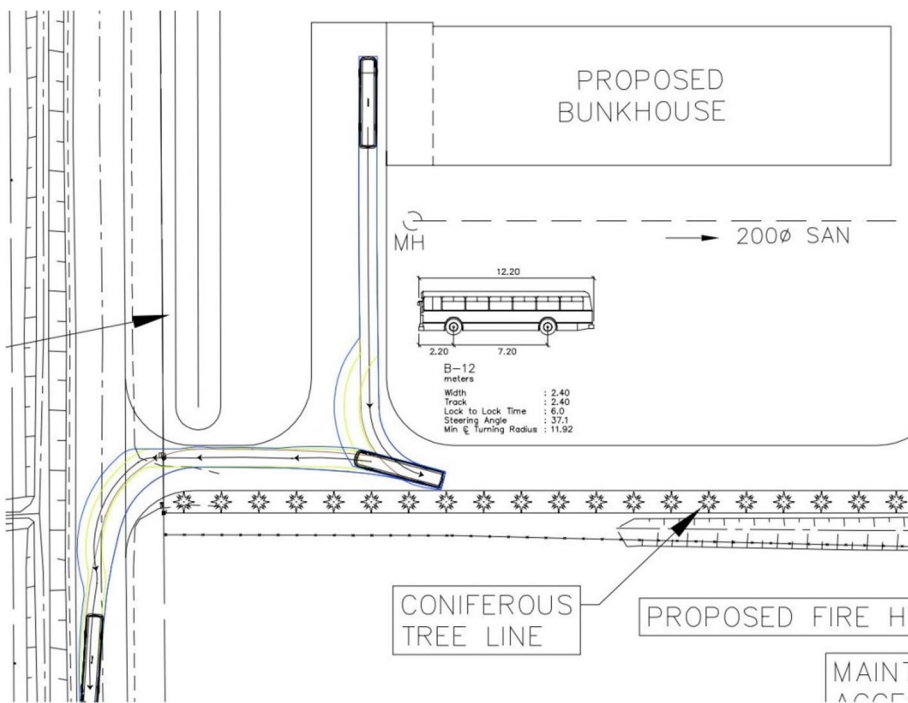


Figure 18: Outbound Bus Movement





## 6.2 Sight Lines at Main Site Driveway

There are no horizontal or vertical curves on Road 3E of any significance in the vicinity of the site.

The TAC document *Geometric Design Guide for Canadian Roads, June 2017* was referenced for sight distance requirements.

The posted speed limit on Road 3E is 60 km/h. Based on this speed limit, a design speed of no more than 80 km/h should be expected on Road 3E. A design speed of 80 km/h corresponds to a stopping sight distance of 130 metres. For a vehicle to perform the left turn movement from the site driveway on to Road 3E, a sight distance of 170 metres is required (for passenger cars). If the vehicle making the left turn movement is a combination truck (e.g., tractor-trailer truck), this value is 250-260 metres.

As noted earlier, Road 3E has no horizontal curves to obstruct sight lines. Nor are there any vertical curves of significance which would create sight line issues. A vehicle positioned at the main site driveway should have enough sight distance in both directions to meet the sight distance requirements identified in the *Geometric Design Guide for Canadian Roads*.

## 7.0 Review of Road 3E

As requested by Town of Kingsville staff, there was a need to review the road width, posted speed limit and road surface on Road 3E in the vicinity of the site to determine whether existing conditions would be acceptable following the development of the subject site. This review is contained in the following subsections.

### 7.1 Road 3E Width

In the vicinity of the subject site, the pavement width is approximately 6.65 metres. There are gravel shoulders on either side of Road 3E. The shoulder on the north side is approximately 0.89 metres while the south side shoulder is approximately 0.86 metres. Altogether, there is a total width of 8.4 metres on Road 3E (including gravel shoulders).

The right-of-way on Road 3E in the vicinity of the site is approximately 20 metres. Section 4.1.2 of the Town of Kingsville Development Manual outlines the pavement widths for two different types of roadways: local urban roads and semi-urban roads. It does not identify pavement width requirements for rural roads. The required pavement width for semi-urban roads is 8.5 metres (measured from pavement edge to pavement edge). Given that the tar and chip road surface threshold has already been exceeded, the Town of Kingsville should consider paving the subject section of Road 3E. Given that no requirements have been outlined by the Town of Kingsville for paved rural roads, it is recommended that

the semi-urban road pavement width (8.5 metres, as illustrated in drawing S22 of the Town of Kingsville Development Manual) be considered by the Town once it paves Road 3E between Division Road and Graham Side Road.

## 7.2 Posted Speed Limit

The posted speed limit on Road 3E is 60 km/h. This speed limit is consistent with many other roadways which provide access to greenhouses within Kingsville and Leamington. A lower speed limit is not required along Road 3E due to the greenhouse development proposed.

## 7.3 Road Surface

The *Canadian Practice in the Design, Use, and Application of Bituminous Surface Treatments* published by the Canadian Strategic Highway Research Program (C-SHRP) was referenced to determine the vehicular volume thresholds for a tar and chip road surface (such as the existing surface on Road 3E). That document noted that chip sealed roadways have a maximum daily traffic volume threshold of 1,000 vehicles.

As noted in *Section 2.2*, existing 24-hour traffic volumes were collected on Road 3E. The existing daily volume on Road 3E between Division Road and Graham Side Road is 1,635.

Given that the traffic volumes on Road 3E have already exceeded the vehicular volume threshold for a tar and chip sealed roadway, the Town of Kingsville should consider upgrading Road 3E to a paved surface.

# 8.0 Travel by Migrant Workers after Hours

Mucci Farms has arranged for a bus to pick up migrant workers who reside on site on Friday evenings and bring them into town (to allow them to purchase groceries, do banking, and other personal activities). Most migrant workers will take advantage of this transportation to get to/from town. However, there will still be some workers who choose to travel into town on their own on other evenings/nights. Many of these workers (who travel into town on non-Fridays) will travel by bicycle. While most migrant workers will utilize the bus service on Friday nights, Mucci Farms estimates that no more than 10 workers a day will travel into town on non-Friday evenings/nights.

To account for this travel behaviour, and to minimize the amount of cyclists on Road 3E, an internal connection on site is envisioned to direct these workers to the Road 2E and Kratz Road intersection. There is currently illumination at the Road 2E and Kratz Road intersection. From this location, the migrant workers will most likely travel 425 metres to the west to the Road 2E and Jaspersen Drive intersection. In 2017, Road 2E was re-paved to provide paved shoulders, which cyclists can utilize

between Kratz Road and Jasperson Drive. At Jasperson Drive, they will travel south towards County Road 20. Approximately 275 metres to the south of the Road 2E and Jasperson Drive intersection is the south driveway to the Kingsville Arena Complex. That driveway connects to a multi-use pathway on the west side of Jasperson Drive. Migrant workers can make use of that pathway to travel south towards County Road 20. Once they reach Peachwood Drive, the multi-use pathway becomes a sidewalk. At that point, they would need to travel (as cyclists) on the west side of the roadway. This section of Jasperson Drive currently has illumination. Jasperson Drive has an urban cross-section (curb and gutter) through this stretch. Many of the destinations of migrant workers are within close proximity to the County Road 20 and Jasperson Drive intersection. The workers would be expected to take the same route (in reverse) when travelling back to the greenhouse site.

Given the magnitude of cyclists that are expected to travel into town from the site, and the presence of illumination and multi-use pathways along the route between the County Road 20 and Jasperson Drive intersection and the Road 2E and Kratz Road intersection, additional bicycle facilities or roadway illumination is not deemed necessary.

Following the construction of the greenhouses, some monitoring of migrant worker travel behaviour should be undertaken to confirm that the magnitude and route choice are consistent with that noted herein.

## 9.0 Summary

Dillon Consulting Limited ("Dillon") has been retained by Mucci Farms to undertake a traffic impact study (TIS) assessing a proposed greenhouse development at 609 Road 3E in the Town of Kingsville. The development application involves the construction of a number of greenhouses and warehouses for the production of cannabis.

This report documents the anticipated change to traffic volumes and intersection operations due to the proposed development; provides an assessment of the need for modifications to traffic control and/or roadway infrastructure; reviews the acceptability of the current road surface on Road 3E; assesses the proposed site driveways from a geometrics and sight distance perspective; and comments on the anticipated travel behaviour associated with migrant workers and its impact on the road network.

### 9.1 Proposed Development

The proposed development includes the construction of greenhouses and warehouses related to the production of cannabis. Also included is a proposed bunkhouse which will house migrant workers on-site. The greenhouses will be phased in over the course of the next 4+ years. It is currently envisioned that the greenhouses, and related warehouse facilities, will be constructed over four phases as follows:

- Phase 1 (2019) – 26 greenhouses, 1 warehouse and 1 bunkhouse;
- Phase 2 (2020) – 25 greenhouses;
- Phase 3 (2021) – 26 greenhouses, 1 warehouse; and,
- Phase 4 (2022) – 25 greenhouses.

Also during Phase 1, the two site driveways will be constructed. The easternmost driveway will function as the main driveway on the site. It will allow motorists to access the site parking lot (containing 117 parking spaces) as well as the warehouse. At the northeast corner of the warehouse, there will be a loading area for truck deliveries. Both employees who drive to the site and truck drivers bringing supplies to the site will utilize this driveway.

The westernmost driveway will largely function as a means of access to the bunkhouse. An internal connection farther south on the site will allow motorists to travel between the bunkhouse and the warehouse and parking lot situated to the east.

## 9.2 Summary of Traffic Operations

The study area for analyses included the Road 3E intersections with Division Road and Graham Side Road, as well as the proposed site driveways.

The study analyses considered the AM and PM peak hours of a typical weekday.

Under existing conditions, all approaches to both Road 3E intersections currently operate at LOS C or better (and well under capacity) during the weekday AM and PM peak hours, with the exception of the westbound approach at Division Road in the weekday PM peak hour. This movement is currently operating at LOS D with a volume-to-capacity (v/c) ratio of 0.52.

Under future background conditions (without the development) in 2019, all movements at the two study area intersections will continue to operate at LOS C or better during both peak hours with the exception of the westbound approach at Division Road; which will continue to operate at LOS D and have a v/c ratio of 0.53. These same operations (LOS C or better for all but one intersection movement; the weekday PM peak hour westbound approach at Division Road) will largely continue in subsequent horizon years (2020 and 2021).

In the 2022 horizon year, all intersection movements will operate at LOS C or better, with the exception of the westbound approach to the Division Road intersection. This movement will operate at LOS D during the AM peak hour and LOS E during the PM peak hour. During both peak hours, the westbound approach will still operate well under capacity at 0.35 in the AM peak hour and 0.56 in the PM peak hour.

In the 2027 horizon year, the eastbound movement at the Road 3E and Division Road intersection will pass the LOS C threshold during the weekday PM peak hour, and operate at LOS D, with a v/c ratio of 0.24. The westbound movement will continue to operate at LOS D and E during the AM and PM peak hours respectively, but still operate under capacity.

Once the site is fully built out, there will be approximately 250 employees. Each peak hour (AM and PM) will generate 164 vehicle trips.

With the introduction of site traffic, all approaches to the Road 3E and Graham Side Road intersection will continue to operate at LOS C or better.

At the Road 3E and Division Road intersection, the westbound approach will experience increasing delays during the future horizon years. During the PM peak hour – the more critical of the two peak hours for the westbound approach – the westbound approach will gradually increase from LOS E and a v/c ratio of 0.66 in 2019 to LOS F and a v/c ratio of 1.06 in 2027. In 2027, the westbound approach will also reach LOS E in the AM peak hour, but still operate under capacity (v/c = 0.53). To address the anticipated future capacity issues on the westbound approach, a westbound left turn lane is recommended. Signalization of the intersection was also considered; however, the traffic volumes are not sufficiently high to warrant traffic control signals.

The main site driveway is expected to operate well during both peak hours in all time horizon years. The northbound driveway approach will operate no worse than LOS B. Left turn lane warrant analyses found that:

- Northbound and Southbound left turn lanes are warranted at the Road 3E and Division Road intersection, with 15 metres and 30 metres of storage respectively;
- No left turn lanes are warranted at the Road 3E and Graham Side Road intersection; and,
- A westbound left turn lane is not warranted on Road 3E at the main site driveway.

### 9.3 Site Driveways

The main site driveway is 10 metres wide while the western site driveway (servicing the bunkhouse) is 6 metres wide. The driveway corner radii are 15 metres. According to the Town of Kingsville Development Manual the maximum driveway width for a greenhouse development is 12 metres (for a two-way driveway). Both driveways do not exceed this maximum width.

Truck turning simulations, using AutoTURN, were completed for both site driveways. These simulations found that the proposed driveway dimensions are sufficient to accommodate the anticipated truck turning movements.

Based on the sight distance requirements identified in the *Geometric Design Guide for Canadian Roads*, there should be adequate sight distance at the proposed site driveway locations.

#### 9.4 Road 3E Review

The posted speed limit on Road 3E is 60 km/h. This speed limit is consistent with many other roadways which provide access to greenhouses within Kingsville and Leamington. A lower speed limit is not required along Road 3E due to the greenhouse development proposed.

The vehicular volume threshold for a tar and chip road surface (such as the existing surface on Road 3E) is 1,000 vehicles per day. Since the existing traffic volumes on Road 3E have already exceeded this threshold, the Town of Kingsville should consider upgrading Road 3E to a paved surface.

The current pavement width in the vicinity of the subject site is approximately 6.65 metres. There are gravel shoulders on either side of Road 3E. The shoulder on the north side is approximately 0.89 metres while the south side shoulder is approximately 0.86 metres. Altogether, there is a total width of 8.4 metres on Road 3E (including gravel shoulders).

The Town of Kingsville Development Manual does not identify pavement width requirements for rural roads. The required pavement width for semi-urban roads is 8.5 metres (measured from pavement edge to pavement edge). Given that the tar and chip road surface threshold has already been exceeded, the Town of Kingsville should consider paving the subject section of Road 3E. It is recommended that the semi-urban road pavement width (8.5 metres, as illustrated in drawing S22 of the Town of Kingsville Development Manual) be considered by the Town once it paves Road 3E between Division Road and Graham Side Road.

#### 9.5 Migrant Worker Travel

Mucci Farms has arranged for a bus to pick up migrant workers who reside on site on Friday evenings and bring them into town (to allow them to purchase groceries, do banking, etc.). Most migrant workers will take advantage of this transportation to get to/from town. However, there will still be some workers who choose to travel into town by bicycle on their own on other evenings/nights. It is estimated that no more than 10 workers a day will travel into town on non-Friday evenings/nights.

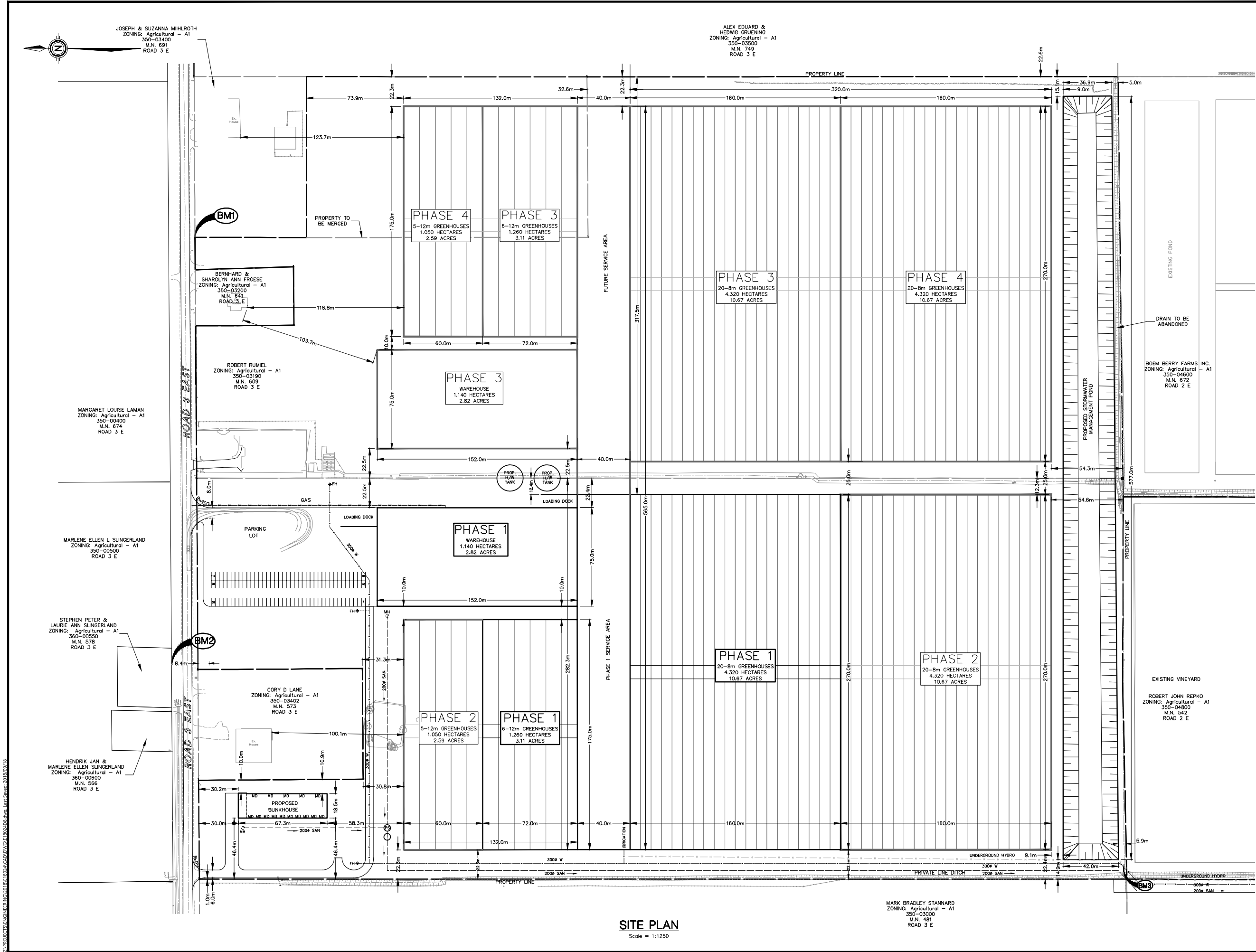
Given the magnitude of cyclists that are expected to travel into town from the site, and the presence of illumination and multi-use pathways along the route between the County Road 20 and Jaspersen Drive intersection and the Road 2E and Kratz Road intersection, additional bicycle facilities or roadway illumination is not deemed necessary.

Following the construction of the greenhouses, some monitoring of migrant worker travel behaviour should be undertaken to confirm that the magnitude and route choice are consistent with that noted herein.

## Appendix A

### *Proposed Site Plan*





**NOTES:**

- THE ACCURACY OF THE UTILITIES SHOWN ON THESE DRAWINGS ARE NOT GUARANTEED BY THE OWNER OR N. J. PERALTA ENGINEERING LTD. OTHER UTILITIES MAY BE PRESENT OR THE UTILITIES SHOWN MAY DIFFER IN SIZE OR LOCATION SHOWN.
- ALL ELEVATIONS SHOWN IN METRES.
- DENOTES EXISTING SITE ELEVATIONS.
- APPROXIMATE PROPOSED TOP SOIL ELEVATION.
- APPROXIMATE PROPOSED FINISHED GRADES.
- DENOTES PROPOSED INVERTS.
- APPROXIMATE PROPOSED SWALE GRADES.
- ALL POND SIDE SLOPES NO STEEPER THAN 4 (HVS.) TO 1 (VER.).
- PLACE TOPSOIL ON ALL SLOPES AND DISTURBED AREAS AND SEED TO GRASS.
- ALL NEW COVERED DRAINS AND SURFACE SWALES TO HAVE OUTLET EROSION PROTECTION.
- EROSION PROTECTION TO COMPRISE OF 300mm THICK QUARRIED LIMESTONE RIP RAP ON NON-WOVEN FILTER CLOTH MINIMUM 2.0m WIDE.
- PROVIDE RODENT GRATES ON ALL DRAIN OUTLETS.
- TOP ELEVATION OF DETENTION POND BANK IS TO BE NO LESS THAN
- STORM EVENTS IN EXCESS OF THE 1:100 YEAR STORM MAY CAUSE FLOODING.
- STORM DRAINAGE AND DETENTION DESIGN BASED ON SITE LAYOUT ESTABLISHED BY OWNER. ADEQUACY OF SITE LAYOUT IS THE RESPONSIBILITY OF THE OWNER.
- THIS PLAN IS TO BE READ IN CONJUNCTION WITH THE STORMWATER MANAGEMENT REPORT DATED MARCH 8th, 2018.
- OWNER/CONTRACTOR IS RESPONSIBLE TO PROVIDE ADEQUATE SEDIMENT CONTROL MEASURES DURING CONSTRUCTION. FOR DETAILS SEE OPS 577.
- DETAILS FOR SEDIMENT CONTROL MEASURES ARE AVAILABLE IN APPENDIX D OF THE STORMWATER MANAGEMENT REPORT.
- CATCH BASINS WITHIN PARKING/TRUCK AREA TO BE PRECAST CONCRETE WITH CAST IRON OR HEAVY DUTY STEEL GRATE OR EQUIVALENT.

**BENCHMARKS**

- TOP HUT OF FIRE HYDRANT K912, APPROX. 25m EAST OF M.N. 641, ON THE SOUTH SIDE OF RD. 3.  
**ELEV. = 199.945m**
- NAIL ON THE SOUTH SIDE OF HYDRO POLE LOCATED ON THE NORTH SIDE OF ROAD 3 EAST AT M.N. 678.  
**ELEV. = 198.066m**
- ORIENT OF FARM ACCESS BRIDGE B/C PIPE LOCATED AT SOUTHWEST CORNER OF PROPERTY.  
**ELEV. = 195.751m**

| TOWN COMMENTS              | H.C.M. | SEPT. 6th, 2018 |
|----------------------------|--------|-----------------|
| LAYOUT CHANGE/OWNER REVIEW | J.J.K. | AUG. 7th, 2018  |
| ISSUED FOR:                | BY     | DATE            |
| REVISIONS                  |        |                 |

**N. J. Peralta Engineering Ltd.**  
Consulting Engineers  
Kingsville Ontario

**ENGINEERING STAMPS:**

**PRELIMINARY NOT FOR CONSTRUCTION**

**MUCCI FARMS GREENHOUSE REPKO LANDS SITE**  
**609 ROAD 3 E**  
**TOWN OF KINGSVILLE, ONTARIO**

**SHEET TITLE:**  
**SITE PLAN**

|                         |                          |
|-------------------------|--------------------------|
| DESIGNED BY:<br>H.C.M.  | DATE:<br>SEPT. 6th, 2018 |
| DRAWN BY:<br>J.J.K.     | SCALE:<br>AS SHOWN       |
| SHEET No.:<br><b>2</b>  | OF:<br><b>3</b>          |
| PROJECT No.:<br>E18-024 |                          |

## Appendix B

### *Traffic Volume Data*

| Tuesday, October 30, 2018 - Road 3E at Division Road Traffic Counts |                   |   |    |   |    |    |                   |    |    |    |    |    |                          |   |     |    |    |    |                          |    |     |   |    |    |          |      |
|---------------------------------------------------------------------|-------------------|---|----|---|----|----|-------------------|----|----|----|----|----|--------------------------|---|-----|----|----|----|--------------------------|----|-----|---|----|----|----------|------|
| Time Period                                                         | Road 3E Eastbound |   |    |   |    |    | Road 3E Westbound |    |    |    |    |    | Division Road Northbound |   |     |    |    |    | Division Road Southbound |    |     |   |    |    | Total    |      |
|                                                                     | U                 | L | T  | R | P1 | P2 | U                 | L  | T  | R  | P1 | P2 | U                        | L | T   | R  | P1 | P2 | U                        | L  | T   | R | P1 | P2 | Vehicles | Peds |
| 7:00 AM                                                             | 0                 | 2 | 3  | 1 | 0  | 0  | 0                 | 14 | 3  | 10 | 0  | 0  | 0                        | 0 | 121 | 23 | 0  | 0  | 0                        | 11 | 34  | 1 | 0  | 0  | 223      | 0    |
| 7:15 AM                                                             | 0                 | 1 | 4  | 2 | 0  | 0  | 0                 | 5  | 4  | 3  | 0  | 0  | 0                        | 0 | 127 | 14 | 0  | 0  | 0                        | 4  | 44  | 1 | 0  | 0  | 209      | 0    |
| 7:30 AM                                                             | 0                 | 2 | 10 | 2 | 0  | 0  | 0                 | 3  | 3  | 9  | 0  | 0  | 0                        | 1 | 118 | 20 | 0  | 0  | 0                        | 11 | 70  | 2 | 0  | 0  | 251      | 0    |
| 7:45 AM                                                             | 0                 | 0 | 7  | 5 | 0  | 0  | 0                 | 1  | 6  | 3  | 0  | 0  | 0                        | 3 | 89  | 27 | 0  | 0  | 0                        | 12 | 98  | 0 | 0  | 0  | 251      | 0    |
| 8:00 AM                                                             | 0                 | 2 | 7  | 3 | 0  | 0  | 0                 | 25 | 8  | 12 | 0  | 0  | 0                        | 1 | 89  | 54 | 0  | 0  | 0                        | 10 | 66  | 1 | 0  | 0  | 278      | 0    |
| 8:15 AM                                                             | 0                 | 1 | 10 | 3 | 0  | 0  | 0                 | 17 | 6  | 5  | 0  | 0  | 0                        | 2 | 71  | 12 | 0  | 0  | 0                        | 3  | 76  | 0 | 0  | 0  | 206      | 0    |
| 8:30 AM                                                             | 0                 | 1 | 8  | 2 | 0  | 0  | 0                 | 6  | 2  | 8  | 0  | 0  | 0                        | 7 | 58  | 7  | 0  | 0  | 0                        | 5  | 78  | 1 | 0  | 0  | 183      | 0    |
| 8:45 AM                                                             | 0                 | 1 | 6  | 7 | 0  | 0  | 0                 | 11 | 2  | 0  | 0  | 0  | 0                        | 2 | 50  | 10 | 0  | 0  | 0                        | 4  | 74  | 1 | 0  | 0  | 168      | 0    |
| 4:00 PM                                                             | 0                 | 1 | 3  | 4 | 0  | 0  | 0                 | 15 | 14 | 4  | 0  | 0  | 0                        | 7 | 75  | 9  | 0  | 0  | 0                        | 3  | 95  | 3 | 0  | 0  | 233      | 0    |
| 4:15 PM                                                             | 0                 | 0 | 2  | 6 | 0  | 0  | 0                 | 17 | 6  | 6  | 0  | 0  | 0                        | 5 | 67  | 9  | 0  | 0  | 0                        | 7  | 100 | 0 | 0  | 0  | 225      | 0    |
| 4:30 PM                                                             | 0                 | 0 | 5  | 2 | 0  | 0  | 0                 | 16 | 8  | 6  | 0  | 0  | 0                        | 4 | 80  | 1  | 0  | 0  | 0                        | 2  | 120 | 3 | 0  | 0  | 247      | 0    |
| 4:45 PM                                                             | 0                 | 3 | 4  | 4 | 0  | 1  | 0                 | 7  | 10 | 4  | 1  | 0  | 0                        | 2 | 73  | 10 | 0  | 0  | 0                        | 6  | 104 | 2 | 0  | 0  | 229      | 2    |
| 5:00 PM                                                             | 0                 | 3 | 6  | 5 | 0  | 0  | 0                 | 16 | 13 | 15 | 0  | 0  | 0                        | 3 | 77  | 9  | 0  | 0  | 0                        | 6  | 116 | 1 | 0  | 0  | 270      | 0    |
| 5:15 PM                                                             | 0                 | 2 | 9  | 2 | 0  | 0  | 0                 | 13 | 17 | 6  | 0  | 0  | 0                        | 6 | 88  | 6  | 0  | 0  | 0                        | 3  | 120 | 0 | 0  | 0  | 272      | 0    |
| 5:30 PM                                                             | 0                 | 1 | 4  | 4 | 0  | 0  | 0                 | 13 | 8  | 4  | 0  | 0  | 0                        | 3 | 64  | 5  | 0  | 0  | 0                        | 3  | 121 | 4 | 0  | 0  | 234      | 0    |
| 5:45 PM                                                             | 0                 | 0 | 5  | 4 | 0  | 0  | 0                 | 14 | 3  | 8  | 0  | 0  | 0                        | 1 | 53  | 4  | 0  | 0  | 0                        | 4  | 129 | 1 | 0  | 0  | 226      | 0    |
| 6:00 PM                                                             | 0                 | 0 | 0  | 0 | 0  | 0  | 0                 | 0  | 0  | 0  | 0  | 0  | 0                        | 1 | 1   | 0  | 0  | 0  | 0                        | 0  | 2   | 0 | 0  | 0  | 4        | 0    |

[illegible]

## Appendix C

### *Level of Service Definitions*

## LEVEL OF SERVICE<sup>1</sup>

Level of Service (LOS) is defined as a qualitative measure describing operational conditions within a traffic stream, and their perception by motorists and/or passengers. This concept was introduced in the 1965 *Highway Capacity Manual* as a criteria for interrupted flow conditions. The 2000 *Highway Capacity Manual* changed the basis for measuring Level of Service at intersections to control delay<sup>2</sup>.

Six Levels of Service are defined with LOS A representing the best operating conditions, and LOS F the worst (briefly described below). It should be noted that there is often significant variability in the amount of delay experienced by individual drivers.

- LOS A:** This Level of Service describes the highest quality of traffic flow and is referred to as free flow. The approach appears open, turning movements are easily made and drivers have freedom of operation. Control delay is less than 10 seconds/vehicle.
- LOS B:** This Level of Service is referred to as a stable flow. Drivers feel somewhat restricted and occasionally may have to wait to complete the minor movement. Control delay is 10-15 seconds/vehicle for unsignalized intersections and 10-20 seconds/vehicle for signalized intersections.
- LOS C:** At this level, the operation is stable. Drivers feel more restricted and may have to wait, with queues developing for short periods. Control delay is 15-25 seconds/vehicle at unsignalized intersections and 20-35 seconds/vehicle at signalized intersections.
- LOS D:** At this level, traffic is approaching unstable flow. The motorist experiences increasing restriction and instability of flow. There are substantial delays to approaching vehicles during short peaks within the peak period, but there are enough gaps to lower demand to permit occasional clearance of developing queues and prevent excessive back-ups. Control delay is 25-35 seconds/vehicle at unsignalized intersections and 35-55 seconds/vehicle at signalized intersections.
- LOS E:** At this level capacity occurs. Long queues of vehicles exist and delays to vehicles may extend. Control delay is 35-50 seconds/vehicle at unsignalized intersections and 55-80 seconds/vehicle at signalized intersections.
- LOS F:** At this Level of Service, the intersection has failed. Capacity of the intersection has been exceeded. Control delay exceeds 50 seconds/vehicle at unsignalized intersections and exceeds 80 seconds/vehicle at signalized intersections.

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<sup>1</sup>

*Transportation Research Board: Highway Capacity Manual 1965, 2000*

<sup>2</sup>

*Control delay is defined as the component of delay that results when a control signal causes a lane group to reduce speed or to stop; it is measured by comparison with the uncontrolled condition.*

## Appendix D

### *Synchro Analysis Worksheets*

HCM 2010 TWSC  
10: Division Rd & Road 3E

AM Peak Hour  
2018 Existing Volumes

| Intersection             |        |       |        |            |        |       |        |      |      |       |      |      |
|--------------------------|--------|-------|--------|------------|--------|-------|--------|------|------|-------|------|------|
| Int Delay, s/veh         | 3.3    |       |        |            |        |       |        |      |      |       |      |      |
| Movement                 | EBL    | EBT   | EBR    | WBL        | WBT    | WBR   | NBL    | NBT  | NBR  | SBL   | SBT  | SBR  |
| Lane Configurations      |        | ↕     |        |            | ↕      |       |        | ↕    |      |       | ↕    |      |
| Traffic Vol, veh/h       | 5      | 30    | 10     | 35         | 20     | 25    | 5      | 425  | 115  | 35    | 280  | 5    |
| Future Vol, veh/h        | 5      | 30    | 10     | 35         | 20     | 25    | 5      | 425  | 115  | 35    | 280  | 5    |
| Conflicting Peds, #/hr   | 0      | 0     | 0      | 0          | 0      | 0     | 0      | 0    | 0    | 0     | 0    | 0    |
| Sign Control             | Stop   | Stop  | Stop   | Stop       | Stop   | Stop  | Free   | Free | Free | Free  | Free | Free |
| RT Channelized           | -      | -     | None   | -          | -      | None  | -      | -    | None | -     | -    | None |
| Storage Length           | -      | -     | -      | -          | -      | -     | -      | -    | -    | -     | -    | -    |
| Veh in Median Storage, # | -      | 0     | -      | -          | 0      | -     | -      | 0    | -    | -     | 0    | -    |
| Grade, %                 | -      | 0     | -      | -          | 0      | -     | -      | 0    | -    | -     | 0    | -    |
| Peak Hour Factor         | 92     | 92    | 92     | 92         | 92     | 92    | 92     | 92   | 92   | 92    | 92   | 92   |
| Heavy Vehicles, %        | 2      | 2     | 2      | 2          | 2      | 2     | 2      | 2    | 2    | 2     | 2    | 2    |
| Mvmt Flow                | 5      | 33    | 11     | 38         | 22     | 27    | 5      | 462  | 125  | 38    | 304  | 5    |
| Major/Minor              | Minor2 |       | Minor1 |            | Major1 |       | Major2 |      |      |       |      |      |
| Conflicting Flow All     | 942    | 980   | 307    | 940        | 920    | 525   | 309    | 0    | 0    | 587   | 0    | 0    |
| Stage 1                  | 383    | 383   | -      | 535        | 535    | -     | -      | -    | -    | -     | -    | -    |
| Stage 2                  | 559    | 597   | -      | 405        | 385    | -     | -      | -    | -    | -     | -    | -    |
| Critical Hdwy            | 7.12   | 6.52  | 6.22   | 7.12       | 6.52   | 6.22  | 4.12   | -    | -    | 4.12  | -    | -    |
| Critical Hdwy Stg 1      | 6.12   | 5.52  | -      | 6.12       | 5.52   | -     | -      | -    | -    | -     | -    | -    |
| Critical Hdwy Stg 2      | 6.12   | 5.52  | -      | 6.12       | 5.52   | -     | -      | -    | -    | -     | -    | -    |
| Follow-up Hdwy           | 3.518  | 4.018 | 3.318  | 3.518      | 4.018  | 3.318 | 2.218  | -    | -    | 2.218 | -    | -    |
| Pot Cap-1 Maneuver       | 243    | 250   | 733    | 244        | 271    | 552   | 1252   | -    | -    | 988   | -    | -    |
| Stage 1                  | 640    | 612   | -      | 529        | 524    | -     | -      | -    | -    | -     | -    | -    |
| Stage 2                  | 513    | 491   | -      | 622        | 611    | -     | -      | -    | -    | -     | -    | -    |
| Platoon blocked, %       |        |       |        |            |        |       |        | -    | -    | -     | -    | -    |
| Mov Cap-1 Maneuver       | 208    | 237   | 733    | 207        | 257    | 552   | 1252   | -    | -    | 988   | -    | -    |
| Mov Cap-2 Maneuver       | 208    | 237   | -      | 207        | 257    | -     | -      | -    | -    | -     | -    | -    |
| Stage 1                  | 636    | 584   | -      | 526        | 521    | -     | -      | -    | -    | -     | -    | -    |
| Stage 2                  | 465    | 488   | -      | 552        | 583    | -     | -      | -    | -    | -     | -    | -    |
| Approach                 | EB     |       | WB     |            | NB     |       | SB     |      |      |       |      |      |
| HCM Control Delay, s     | 21     |       | 24.1   |            | 0.1    |       | 1      |      |      |       |      |      |
| HCM LOS                  | C      |       | C      |            |        |       |        |      |      |       |      |      |
| Minor Lane/Major Mvmt    | NBL    | NBT   | NBR    | EBLn1WBLn1 | SBL    | SBT   | SBR    |      |      |       |      |      |
| Capacity (veh/h)         | 1252   | -     | -      | 274        | 274    | 988   | -      | -    |      |       |      |      |
| HCM Lane V/C Ratio       | 0.004  | -     | -      | 0.179      | 0.317  | 0.039 | -      | -    |      |       |      |      |
| HCM Control Delay (s)    | 7.9    | 0     | -      | 21         | 24.1   | 8.8   | 0      | -    |      |       |      |      |
| HCM Lane LOS             | A      | A     | -      | C          | C      | A     | A      | -    |      |       |      |      |
| HCM 95th %tile Q(veh)    | 0      | -     | -      | 0.6        | 1.3    | 0.1   | -      | -    |      |       |      |      |



HCM 2010 TWSC  
20: Site Access & Road 3E

AM Peak Hour  
2018 Existing Volumes

| Intersection             |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|--------------------------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------|
| Int Delay, s/veh         | 0                                                                                 |        |       |                                                                                   |                                                                                   |       |
| Movement                 | EBT                                                                               | EBR    | WBL   | WBT                                                                               | NBL                                                                               | NBR   |
| Lane Configurations      |  |        |       |  |  |       |
| Traffic Vol, veh/h       | 180                                                                               | 0      | 0     | 80                                                                                | 0                                                                                 | 0     |
| Future Vol, veh/h        | 180                                                                               | 0      | 0     | 80                                                                                | 0                                                                                 | 0     |
| Conflicting Peds, #/hr   | 0                                                                                 | 0      | 0     | 0                                                                                 | 0                                                                                 | 0     |
| Sign Control             | Free                                                                              | Free   | Free  | Free                                                                              | Stop                                                                              | Stop  |
| RT Channelized           | -                                                                                 | None   | -     | None                                                                              | -                                                                                 | None  |
| Storage Length           | -                                                                                 | -      | -     | -                                                                                 | 0                                                                                 | -     |
| Veh in Median Storage, # | 0                                                                                 | -      | -     | 0                                                                                 | 0                                                                                 | -     |
| Grade, %                 | 0                                                                                 | -      | -     | 0                                                                                 | 0                                                                                 | -     |
| Peak Hour Factor         | 92                                                                                | 92     | 92    | 92                                                                                | 92                                                                                | 92    |
| Heavy Vehicles, %        | 2                                                                                 | 2      | 2     | 2                                                                                 | 2                                                                                 | 2     |
| Mvmt Flow                | 196                                                                               | 0      | 0     | 87                                                                                | 0                                                                                 | 0     |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Major/Minor              | Major1                                                                            | Major2 |       | Minor1                                                                            |                                                                                   |       |
| Conflicting Flow All     | 0                                                                                 | 0      | 196   | 0                                                                                 | 283                                                                               | 196   |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 196                                                                               | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 87                                                                                | -     |
| Critical Hdwy            | -                                                                                 | -      | 4.12  | -                                                                                 | 6.42                                                                              | 6.22  |
| Critical Hdwy Stg 1      | -                                                                                 | -      | -     | -                                                                                 | 5.42                                                                              | -     |
| Critical Hdwy Stg 2      | -                                                                                 | -      | -     | -                                                                                 | 5.42                                                                              | -     |
| Follow-up Hdwy           | -                                                                                 | -      | 2.218 | -                                                                                 | 3.518                                                                             | 3.318 |
| Pot Cap-1 Maneuver       | -                                                                                 | -      | 1377  | -                                                                                 | 707                                                                               | 845   |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 837                                                                               | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 936                                                                               | -     |
| Platoon blocked, %       | -                                                                                 | -      |       | -                                                                                 |                                                                                   |       |
| Mov Cap-1 Maneuver       | -                                                                                 | -      | 1377  | -                                                                                 | 707                                                                               | 845   |
| Mov Cap-2 Maneuver       | -                                                                                 | -      | -     | -                                                                                 | 707                                                                               | -     |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 837                                                                               | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 936                                                                               | -     |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Approach                 | EB                                                                                | WB     |       | NB                                                                                |                                                                                   |       |
| HCM Control Delay, s     | 0                                                                                 | 0      |       | 0                                                                                 |                                                                                   |       |
| HCM LOS                  |                                                                                   |        |       |                                                                                   | A                                                                                 |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Minor Lane/Major Mvmt    | NBLn1                                                                             | EBT    | EBR   | WBL                                                                               | WBT                                                                               |       |
| Capacity (veh/h)         | -                                                                                 | -      | -     | 1377                                                                              | -                                                                                 |       |
| HCM Lane V/C Ratio       | -                                                                                 | -      | -     | -                                                                                 | -                                                                                 |       |
| HCM Control Delay (s)    | 0                                                                                 | -      | -     | 0                                                                                 | -                                                                                 |       |
| HCM Lane LOS             | A                                                                                 | -      | -     | A                                                                                 | -                                                                                 |       |
| HCM 95th %tile Q(veh)    | -                                                                                 | -      | -     | 0                                                                                 | -                                                                                 |       |

HCM 2010 TWSC  
30: Graham Side Rd & Road 3E

AM Peak Hour  
2018 Existing Volumes

| Intersection             |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
|--------------------------|--------|-----------------------------------------------------------------------------------|------|--------|-----------------------------------------------------------------------------------|------|--------|-----------------------------------------------------------------------------------|-------|--------|-------------------------------------------------------------------------------------|-------|
| Int Delay, s/veh         | 6.1    |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
| Movement                 | EBL    | EBT                                                                               | EBR  | WBL    | WBT                                                                               | WBR  | NBL    | NBT                                                                               | NBR   | SBL    | SBT                                                                                 | SBR   |
| Lane Configurations      |        |  |      |        |  |      |        |  |       |        |  |       |
| Traffic Vol, veh/h       | 25     | 150                                                                               | 10   | 20     | 60                                                                                | 5    | 5      | 80                                                                                | 50    | 15     | 50                                                                                  | 15    |
| Future Vol, veh/h        | 25     | 150                                                                               | 10   | 20     | 60                                                                                | 5    | 5      | 80                                                                                | 50    | 15     | 50                                                                                  | 15    |
| Conflicting Peds, #/hr   | 0      | 0                                                                                 | 0    | 0      | 0                                                                                 | 0    | 0      | 0                                                                                 | 0     | 0      | 0                                                                                   | 0     |
| Sign Control             | Free   | Free                                                                              | Free | Free   | Free                                                                              | Free | Stop   | Stop                                                                              | Stop  | Stop   | Stop                                                                                | Stop  |
| RT Channelized           | -      | -                                                                                 | None | -      | -                                                                                 | None | -      | -                                                                                 | None  | -      | -                                                                                   | None  |
| Storage Length           | -      | -                                                                                 | -    | -      | -                                                                                 | -    | -      | -                                                                                 | -     | -      | -                                                                                   | -     |
| Veh in Median Storage, # | -      | 0                                                                                 | -    | -      | 0                                                                                 | -    | -      | 0                                                                                 | -     | -      | 0                                                                                   | -     |
| Grade, %                 | -      | 0                                                                                 | -    | -      | 0                                                                                 | -    | -      | 0                                                                                 | -     | -      | 0                                                                                   | -     |
| Peak Hour Factor         | 92     | 92                                                                                | 92   | 92     | 92                                                                                | 92   | 92     | 92                                                                                | 92    | 92     | 92                                                                                  | 92    |
| Heavy Vehicles, %        | 2      | 2                                                                                 | 2    | 2      | 2                                                                                 | 2    | 2      | 2                                                                                 | 2     | 2      | 2                                                                                   | 2     |
| Mvmt Flow                | 27     | 163                                                                               | 11   | 22     | 65                                                                                | 5    | 5      | 87                                                                                | 54    | 16     | 54                                                                                  | 16    |
|                          |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
| Major/Minor              | Major1 |                                                                                   |      | Major2 |                                                                                   |      | Minor1 |                                                                                   |       | Minor2 |                                                                                     |       |
| Conflicting Flow All     | 70     | 0                                                                                 | 0    | 174    | 0                                                                                 | 0    | 370    | 337                                                                               | 169   | 405    | 340                                                                                 | 68    |
| Stage 1                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 223    | 223                                                                               | -     | 112    | 112                                                                                 | -     |
| Stage 2                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 147    | 114                                                                               | -     | 293    | 228                                                                                 | -     |
| Critical Hdwy            | 4.12   | -                                                                                 | -    | 4.12   | -                                                                                 | -    | 7.12   | 6.52                                                                              | 6.22  | 7.12   | 6.52                                                                                | 6.22  |
| Critical Hdwy Stg 1      | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 6.12   | 5.52                                                                              | -     | 6.12   | 5.52                                                                                | -     |
| Critical Hdwy Stg 2      | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 6.12   | 5.52                                                                              | -     | 6.12   | 5.52                                                                                | -     |
| Follow-up Hdwy           | 2.218  | -                                                                                 | -    | 2.218  | -                                                                                 | -    | 3.518  | 4.018                                                                             | 3.318 | 3.518  | 4.018                                                                               | 3.318 |
| Pot Cap-1 Maneuver       | 1531   | -                                                                                 | -    | 1403   | -                                                                                 | -    | 587    | 584                                                                               | 875   | 556    | 582                                                                                 | 995   |
| Stage 1                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 780    | 719                                                                               | -     | 893    | 803                                                                                 | -     |
| Stage 2                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 856    | 801                                                                               | -     | 715    | 715                                                                                 | -     |
| Platoon blocked, %       |        | -                                                                                 | -    |        | -                                                                                 | -    |        |                                                                                   |       |        |                                                                                     |       |
| Mov Cap-1 Maneuver       | 1531   | -                                                                                 | -    | 1403   | -                                                                                 | -    | 520    | 563                                                                               | 875   | 448    | 561                                                                                 | 995   |
| Mov Cap-2 Maneuver       | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 520    | 563                                                                               | -     | 448    | 561                                                                                 | -     |
| Stage 1                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 764    | 705                                                                               | -     | 875    | 790                                                                                 | -     |
| Stage 2                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 772    | 788                                                                               | -     | 576    | 701                                                                                 | -     |
|                          |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
|                          |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
| Approach                 | EB     |                                                                                   |      | WB     |                                                                                   |      | NB     |                                                                                   |       | SB     |                                                                                     |       |
| HCM Control Delay, s     | 1      |                                                                                   |      | 1.8    |                                                                                   |      | 12.2   |                                                                                   |       | 12.3   |                                                                                     |       |
| HCM LOS                  |        |                                                                                   |      |        |                                                                                   |      | B      |                                                                                   |       | B      |                                                                                     |       |
|                          |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
| Minor Lane/Major Mvmt    | NBLn1  | EBL                                                                               | EBT  | EBR    | WBL                                                                               | WBT  | WBR    | SBLn1                                                                             |       |        |                                                                                     |       |
| Capacity (veh/h)         | 646    | 1531                                                                              | -    | -      | 1403                                                                              | -    | -      | 581                                                                               |       |        |                                                                                     |       |
| HCM Lane V/C Ratio       | 0.227  | 0.018                                                                             | -    | -      | 0.015                                                                             | -    | -      | 0.15                                                                              |       |        |                                                                                     |       |
| HCM Control Delay (s)    | 12.2   | 7.4                                                                               | 0    | -      | 7.6                                                                               | 0    | -      | 12.3                                                                              |       |        |                                                                                     |       |
| HCM Lane LOS             | B      | A                                                                                 | A    | -      | A                                                                                 | A    | -      | B                                                                                 |       |        |                                                                                     |       |
| HCM 95th %tile O(veh)    | 0.9    | 0.1                                                                               | -    | -      | 0                                                                                 | -    | -      | 0.5                                                                               |       |        |                                                                                     |       |

| Intersection             |        |                                                                                   |        |       |                                                                                   |        |       |                                                                                   |        |       |                                                                                     |      |
|--------------------------|--------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|--------|-------|-------------------------------------------------------------------------------------|------|
| Int Delay, s/veh         | 5.4    |                                                                                   |        |       |                                                                                   |        |       |                                                                                   |        |       |                                                                                     |      |
| Movement                 | EBL    | EBT                                                                               | EBR    | WBL   | WBT                                                                               | WBR    | NBL   | NBT                                                                               | NBR    | SBL   | SBT                                                                                 | SBR  |
| Lane Configurations      |        |  |        |       |  |        |       |  |        |       |  |      |
| Traffic Vol, veh/h       | 10     | 25                                                                                | 15     | 50    | 50                                                                                | 30     | 15    | 320                                                                               | 25     | 15    | 460                                                                                 | 5    |
| Future Vol, veh/h        | 10     | 25                                                                                | 15     | 50    | 50                                                                                | 30     | 15    | 320                                                                               | 25     | 15    | 460                                                                                 | 5    |
| Conflicting Peds, #/hr   | 0      | 0                                                                                 | 0      | 0     | 0                                                                                 | 0      | 0     | 0                                                                                 | 0      | 0     | 0                                                                                   | 0    |
| Sign Control             | Stop   | Stop                                                                              | Stop   | Stop  | Stop                                                                              | Stop   | Free  | Free                                                                              | Free   | Free  | Free                                                                                | Free |
| RT Channelized           | -      | -                                                                                 | None   | -     | -                                                                                 | None   | -     | -                                                                                 | None   | -     | -                                                                                   | None |
| Storage Length           | -      | -                                                                                 | -      | -     | -                                                                                 | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Veh in Median Storage, # | -      | 0                                                                                 | -      | -     | 0                                                                                 | -      | -     | 0                                                                                 | -      | -     | 0                                                                                   | -    |
| Grade, %                 | -      | 0                                                                                 | -      | -     | 0                                                                                 | -      | -     | 0                                                                                 | -      | -     | 0                                                                                   | -    |
| Peak Hour Factor         | 92     | 92                                                                                | 92     | 92    | 92                                                                                | 92     | 92    | 92                                                                                | 92     | 92    | 92                                                                                  | 92   |
| Heavy Vehicles, %        | 2      | 2                                                                                 | 2      | 2     | 2                                                                                 | 2      | 2     | 2                                                                                 | 2      | 2     | 2                                                                                   | 2    |
| Mvmt Flow                | 11     | 27                                                                                | 16     | 54    | 54                                                                                | 33     | 16    | 348                                                                               | 27     | 16    | 500                                                                                 | 5    |
|                          |        |                                                                                   |        |       |                                                                                   |        |       |                                                                                   |        |       |                                                                                     |      |
| Major/Minor              | Minor2 |                                                                                   | Minor1 |       |                                                                                   | Major1 |       |                                                                                   | Major2 |       |                                                                                     |      |
| Conflicting Flow All     | 972    | 942                                                                               | 503    | 950   | 931                                                                               | 362    | 505   | 0                                                                                 | 0      | 375   | 0                                                                                   | 0    |
| Stage 1                  | 535    | 535                                                                               | -      | 394   | 394                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Stage 2                  | 437    | 407                                                                               | -      | 556   | 537                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Critical Hdwy            | 7.12   | 6.52                                                                              | 6.22   | 7.12  | 6.52                                                                              | 6.22   | 4.12  | -                                                                                 | -      | 4.12  | -                                                                                   | -    |
| Critical Hdwy Stg 1      | 6.12   | 5.52                                                                              | -      | 6.12  | 5.52                                                                              | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Critical Hdwy Stg 2      | 6.12   | 5.52                                                                              | -      | 6.12  | 5.52                                                                              | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Follow-up Hdwy           | 3.518  | 4.018                                                                             | 3.318  | 3.518 | 4.018                                                                             | 3.318  | 2.218 | -                                                                                 | -      | 2.218 | -                                                                                   | -    |
| Pot Cap-1 Maneuver       | 232    | 263                                                                               | 569    | 240   | 267                                                                               | 683    | 1060  | -                                                                                 | -      | 1183  | -                                                                                   | -    |
| Stage 1                  | 529    | 524                                                                               | -      | 631   | 605                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Stage 2                  | 598    | 597                                                                               | -      | 515   | 523                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Platoon blocked, %       |        |                                                                                   |        |       |                                                                                   |        |       | -                                                                                 | -      |       | -                                                                                   | -    |
| Mov Cap-1 Maneuver       | 180    | 253                                                                               | 569    | 208   | 257                                                                               | 683    | 1060  | -                                                                                 | -      | 1183  | -                                                                                   | -    |
| Mov Cap-2 Maneuver       | 180    | 253                                                                               | -      | 208   | 257                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Stage 1                  | 519    | 514                                                                               | -      | 619   | 594                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Stage 2                  | 508    | 586                                                                               | -      | 465   | 513                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
|                          |        |                                                                                   |        |       |                                                                                   |        |       |                                                                                   |        |       |                                                                                     |      |
| Approach                 | EB     |                                                                                   | WB     |       |                                                                                   | NB     |       |                                                                                   | SB     |       |                                                                                     |      |
| HCM Control Delay, s     | 21.1   |                                                                                   | 31.9   |       |                                                                                   | 0.4    |       |                                                                                   | 0.3    |       |                                                                                     |      |
| HCM LOS                  | C      |                                                                                   | D      |       |                                                                                   |        |       |                                                                                   |        |       |                                                                                     |      |
|                          |        |                                                                                   |        |       |                                                                                   |        |       |                                                                                   |        |       |                                                                                     |      |
| Minor Lane/Major Mvmt    | NBL    | NBT                                                                               | NBR    | EBLn1 | WBLn1                                                                             | SBL    | SBT   | SBR                                                                               |        |       |                                                                                     |      |
| Capacity (veh/h)         | 1060   | -                                                                                 | -      | 277   | 271                                                                               | 1183   | -     | -                                                                                 |        |       |                                                                                     |      |
| HCM Lane V/C Ratio       | 0.015  | -                                                                                 | -      | 0.196 | 0.521                                                                             | 0.014  | -     | -                                                                                 |        |       |                                                                                     |      |
| HCM Control Delay (s)    | 8.4    | 0                                                                                 | -      | 21.1  | 31.9                                                                              | 8.1    | 0     | -                                                                                 |        |       |                                                                                     |      |
| HCM Lane LOS             | A      | A                                                                                 | -      | C     | D                                                                                 | A      | A     | -                                                                                 |        |       |                                                                                     |      |
| HCM 95th %tile Q(veh)    | 0      | -                                                                                 | -      | 0.7   | 2.8                                                                               | 0      | -     | -                                                                                 |        |       |                                                                                     |      |

| Intersection             |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|--------------------------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------|
| Int Delay, s/veh         | 0                                                                                 |        |       |                                                                                   |                                                                                   |       |
| Movement                 | EBT                                                                               | EBR    | WBL   | WBT                                                                               | NBL                                                                               | NBR   |
| Lane Configurations      |  |        |       |  |  |       |
| Traffic Vol, veh/h       | 65                                                                                | 0      | 0     | 130                                                                               | 0                                                                                 | 0     |
| Future Vol, veh/h        | 65                                                                                | 0      | 0     | 130                                                                               | 0                                                                                 | 0     |
| Conflicting Peds, #/hr   | 0                                                                                 | 0      | 0     | 0                                                                                 | 0                                                                                 | 0     |
| Sign Control             | Free                                                                              | Free   | Free  | Free                                                                              | Stop                                                                              | Stop  |
| RT Channelized           | -                                                                                 | None   | -     | None                                                                              | -                                                                                 | None  |
| Storage Length           | -                                                                                 | -      | -     | -                                                                                 | 0                                                                                 | -     |
| Veh in Median Storage, # | 0                                                                                 | -      | -     | 0                                                                                 | 0                                                                                 | -     |
| Grade, %                 | 0                                                                                 | -      | -     | 0                                                                                 | 0                                                                                 | -     |
| Peak Hour Factor         | 92                                                                                | 92     | 92    | 92                                                                                | 92                                                                                | 92    |
| Heavy Vehicles, %        | 2                                                                                 | 2      | 2     | 2                                                                                 | 2                                                                                 | 2     |
| Mvmt Flow                | 71                                                                                | 0      | 0     | 141                                                                               | 0                                                                                 | 0     |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Major/Minor              | Major1                                                                            | Major2 |       | Minor1                                                                            |                                                                                   |       |
| Conflicting Flow All     | 0                                                                                 | 0      | 71    | 0                                                                                 | 212                                                                               | 71    |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 71                                                                                | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 141                                                                               | -     |
| Critical Hdwy            | -                                                                                 | -      | 4.12  | -                                                                                 | 6.42                                                                              | 6.22  |
| Critical Hdwy Stg 1      | -                                                                                 | -      | -     | -                                                                                 | 5.42                                                                              | -     |
| Critical Hdwy Stg 2      | -                                                                                 | -      | -     | -                                                                                 | 5.42                                                                              | -     |
| Follow-up Hdwy           | -                                                                                 | -      | 2.218 | -                                                                                 | 3.518                                                                             | 3.318 |
| Pot Cap-1 Maneuver       | -                                                                                 | -      | 1529  | -                                                                                 | 776                                                                               | 991   |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 952                                                                               | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 886                                                                               | -     |
| Platoon blocked, %       | -                                                                                 | -      |       | -                                                                                 |                                                                                   |       |
| Mov Cap-1 Maneuver       | -                                                                                 | -      | 1529  | -                                                                                 | 776                                                                               | 991   |
| Mov Cap-2 Maneuver       | -                                                                                 | -      | -     | -                                                                                 | 776                                                                               | -     |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 952                                                                               | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 886                                                                               | -     |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Approach                 | EB                                                                                | WB     |       | NB                                                                                |                                                                                   |       |
| HCM Control Delay, s     | 0                                                                                 | 0      |       | 0                                                                                 |                                                                                   |       |
| HCM LOS                  | A                                                                                 |        |       |                                                                                   |                                                                                   |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Minor Lane/Major Mvmt    | NBLn1                                                                             | EBT    | EBR   | WBL                                                                               | WBT                                                                               |       |
| Capacity (veh/h)         | -                                                                                 | -      | -     | 1529                                                                              | -                                                                                 |       |
| HCM Lane V/C Ratio       | -                                                                                 | -      | -     | -                                                                                 | -                                                                                 |       |
| HCM Control Delay (s)    | 0                                                                                 | -      | -     | 0                                                                                 | -                                                                                 |       |
| HCM Lane LOS             | A                                                                                 | -      | -     | A                                                                                 | -                                                                                 |       |
| HCM 95th %tile Q(veh)    | -                                                                                 | -      | -     | 0                                                                                 | -                                                                                 |       |

HCM 2010 TWSC  
30: Graham Side Rd & Road 3E

PM Peak Hour  
2018 Existing Volumes

| Intersection             |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
|--------------------------|--------|-----------------------------------------------------------------------------------|------|--------|-----------------------------------------------------------------------------------|------|--------|-----------------------------------------------------------------------------------|-------|--------|-------------------------------------------------------------------------------------|-------|
| Int Delay, s/veh         | 7.5    |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
| Movement                 | EBL    | EBT                                                                               | EBR  | WBL    | WBT                                                                               | WBR  | NBL    | NBT                                                                               | NBR   | SBL    | SBT                                                                                 | SBR   |
| Lane Configurations      |        |  |      |        |  |      |        |  |       |        |  |       |
| Traffic Vol, veh/h       | 10     | 45                                                                                | 10   | 65     | 105                                                                               | 20   | 5      | 60                                                                                | 25    | 15     | 115                                                                                 | 20    |
| Future Vol, veh/h        | 10     | 45                                                                                | 10   | 65     | 105                                                                               | 20   | 5      | 60                                                                                | 25    | 15     | 115                                                                                 | 20    |
| Conflicting Peds, #/hr   | 0      | 0                                                                                 | 0    | 0      | 0                                                                                 | 0    | 0      | 0                                                                                 | 0     | 0      | 0                                                                                   | 0     |
| Sign Control             | Free   | Free                                                                              | Free | Free   | Free                                                                              | Free | Stop   | Stop                                                                              | Stop  | Stop   | Stop                                                                                | Stop  |
| RT Channelized           | -      | -                                                                                 | None | -      | -                                                                                 | None | -      | -                                                                                 | None  | -      | -                                                                                   | None  |
| Storage Length           | -      | -                                                                                 | -    | -      | -                                                                                 | -    | -      | -                                                                                 | -     | -      | -                                                                                   | -     |
| Veh in Median Storage, # | -      | 0                                                                                 | -    | -      | 0                                                                                 | -    | -      | 0                                                                                 | -     | -      | 0                                                                                   | -     |
| Grade, %                 | -      | 0                                                                                 | -    | -      | 0                                                                                 | -    | -      | 0                                                                                 | -     | -      | 0                                                                                   | -     |
| Peak Hour Factor         | 92     | 92                                                                                | 92   | 92     | 92                                                                                | 92   | 92     | 92                                                                                | 92    | 92     | 92                                                                                  | 92    |
| Heavy Vehicles, %        | 2      | 2                                                                                 | 2    | 2      | 2                                                                                 | 2    | 2      | 2                                                                                 | 2     | 2      | 2                                                                                   | 2     |
| Mvmt Flow                | 11     | 49                                                                                | 11   | 71     | 114                                                                               | 22   | 5      | 65                                                                                | 27    | 16     | 125                                                                                 | 22    |
|                          |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
| Major/Minor              | Major1 |                                                                                   |      | Major2 |                                                                                   |      | Minor1 |                                                                                   |       | Minor2 |                                                                                     |       |
| Conflicting Flow All     | 136    | 0                                                                                 | 0    | 60     | 0                                                                                 | 0    | 418    | 355                                                                               | 55    | 390    | 349                                                                                 | 125   |
| Stage 1                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 77     | 77                                                                                | -     | 267    | 267                                                                                 | -     |
| Stage 2                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 341    | 278                                                                               | -     | 123    | 82                                                                                  | -     |
| Critical Hdwy            | 4.12   | -                                                                                 | -    | 4.12   | -                                                                                 | -    | 7.12   | 6.52                                                                              | 6.22  | 7.12   | 6.52                                                                                | 6.22  |
| Critical Hdwy Stg 1      | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 6.12   | 5.52                                                                              | -     | 6.12   | 5.52                                                                                | -     |
| Critical Hdwy Stg 2      | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 6.12   | 5.52                                                                              | -     | 6.12   | 5.52                                                                                | -     |
| Follow-up Hdwy           | 2.218  | -                                                                                 | -    | 2.218  | -                                                                                 | -    | 3.518  | 4.018                                                                             | 3.318 | 3.518  | 4.018                                                                               | 3.318 |
| Pot Cap-1 Maneuver       | 1448   | -                                                                                 | -    | 1544   | -                                                                                 | -    | 545    | 571                                                                               | 1012  | 569    | 575                                                                                 | 926   |
| Stage 1                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 932    | 831                                                                               | -     | 738    | 688                                                                                 | -     |
| Stage 2                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 674    | 680                                                                               | -     | 881    | 827                                                                                 | -     |
| Platoon blocked, %       |        | -                                                                                 | -    |        | -                                                                                 | -    |        |                                                                                   |       |        |                                                                                     |       |
| Mov Cap-1 Maneuver       | 1448   | -                                                                                 | -    | 1544   | -                                                                                 | -    | 419    | 538                                                                               | 1012  | 481    | 542                                                                                 | 926   |
| Mov Cap-2 Maneuver       | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 419    | 538                                                                               | -     | 481    | 542                                                                                 | -     |
| Stage 1                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 925    | 824                                                                               | -     | 732    | 654                                                                                 | -     |
| Stage 2                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 506    | 646                                                                               | -     | 783    | 820                                                                                 | -     |
|                          |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
| Approach                 | EB     |                                                                                   |      | WB     |                                                                                   |      | NB     |                                                                                   |       | SB     |                                                                                     |       |
| HCM Control Delay, s     | 1.2    |                                                                                   |      | 2.5    |                                                                                   |      | 12.1   |                                                                                   |       | 13.9   |                                                                                     |       |
| HCM LOS                  |        |                                                                                   |      |        |                                                                                   |      | B      |                                                                                   |       | B      |                                                                                     |       |
|                          |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
| Minor Lane/Major Mvmt    | NBLn1  | EBL                                                                               | EBT  | EBR    | WBL                                                                               | WBT  | WBR    | SBLn1                                                                             |       |        |                                                                                     |       |
| Capacity (veh/h)         | 607    | 1448                                                                              | -    | -      | 1544                                                                              | -    | -      | 566                                                                               |       |        |                                                                                     |       |
| HCM Lane V/C Ratio       | 0.161  | 0.008                                                                             | -    | -      | 0.046                                                                             | -    | -      | 0.288                                                                             |       |        |                                                                                     |       |
| HCM Control Delay (s)    | 12.1   | 7.5                                                                               | 0    | -      | 7.4                                                                               | 0    | -      | 13.9                                                                              |       |        |                                                                                     |       |
| HCM Lane LOS             | B      | A                                                                                 | A    | -      | A                                                                                 | A    | -      | B                                                                                 |       |        |                                                                                     |       |
| HCM 95th %tile Q(veh)    | 0.6    | 0                                                                                 | -    | -      | 0.1                                                                               | -    | -      | 1.2                                                                               |       |        |                                                                                     |       |

| Intersection             |        |                                                                                   |        |       |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
|--------------------------|--------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|-------|--------|-----------------------------------------------------------------------------------|------|-------|-------------------------------------------------------------------------------------|------|
| Int Delay, s/veh         | 3.3    |                                                                                   |        |       |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
| Movement                 | EBL    | EBT                                                                               | EBR    | WBL   | WBT                                                                               | WBR   | NBL    | NBT                                                                               | NBR  | SBL   | SBT                                                                                 | SBR  |
| Lane Configurations      |        |  |        |       |  |       |        |  |      |       |  |      |
| Traffic Vol, veh/h       | 5      | 30                                                                                | 10     | 35    | 20                                                                                | 25    | 5      | 430                                                                               | 115  | 35    | 280                                                                                 | 5    |
| Future Vol, veh/h        | 5      | 30                                                                                | 10     | 35    | 20                                                                                | 25    | 5      | 430                                                                               | 115  | 35    | 280                                                                                 | 5    |
| Conflicting Peds, #/hr   | 0      | 0                                                                                 | 0      | 0     | 0                                                                                 | 0     | 0      | 0                                                                                 | 0    | 0     | 0                                                                                   | 0    |
| Sign Control             | Stop   | Stop                                                                              | Stop   | Stop  | Stop                                                                              | Stop  | Free   | Free                                                                              | Free | Free  | Free                                                                                | Free |
| RT Channelized           | -      | -                                                                                 | None   | -     | -                                                                                 | None  | -      | -                                                                                 | None | -     | -                                                                                   | None |
| Storage Length           | -      | -                                                                                 | -      | -     | -                                                                                 | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Veh in Median Storage, # | -      | 0                                                                                 | -      | -     | 0                                                                                 | -     | -      | 0                                                                                 | -    | -     | 0                                                                                   | -    |
| Grade, %                 | -      | 0                                                                                 | -      | -     | 0                                                                                 | -     | -      | 0                                                                                 | -    | -     | 0                                                                                   | -    |
| Peak Hour Factor         | 92     | 92                                                                                | 92     | 92    | 92                                                                                | 92    | 92     | 92                                                                                | 92   | 92    | 92                                                                                  | 92   |
| Heavy Vehicles, %        | 2      | 2                                                                                 | 2      | 2     | 2                                                                                 | 2     | 2      | 2                                                                                 | 2    | 2     | 2                                                                                   | 2    |
| Mvmt Flow                | 5      | 33                                                                                | 11     | 38    | 22                                                                                | 27    | 5      | 467                                                                               | 125  | 38    | 304                                                                                 | 5    |
|                          |        |                                                                                   |        |       |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
| Major/Minor              | Minor2 |                                                                                   | Minor1 |       | Major1                                                                            |       | Major2 |                                                                                   |      |       |                                                                                     |      |
| Conflicting Flow All     | 947    | 985                                                                               | 307    | 945   | 925                                                                               | 530   | 309    | 0                                                                                 | 0    | 592   | 0                                                                                   | 0    |
| Stage 1                  | 383    | 383                                                                               | -      | 540   | 540                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Stage 2                  | 564    | 602                                                                               | -      | 405   | 385                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Critical Hdwy            | 7.12   | 6.52                                                                              | 6.22   | 7.12  | 6.52                                                                              | 6.22  | 4.12   | -                                                                                 | -    | 4.12  | -                                                                                   | -    |
| Critical Hdwy Stg 1      | 6.12   | 5.52                                                                              | -      | 6.12  | 5.52                                                                              | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Critical Hdwy Stg 2      | 6.12   | 5.52                                                                              | -      | 6.12  | 5.52                                                                              | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Follow-up Hdwy           | 3.518  | 4.018                                                                             | 3.318  | 3.518 | 4.018                                                                             | 3.318 | 2.218  | -                                                                                 | -    | 2.218 | -                                                                                   | -    |
| Pot Cap-1 Maneuver       | 241    | 248                                                                               | 733    | 242   | 269                                                                               | 549   | 1252   | -                                                                                 | -    | 984   | -                                                                                   | -    |
| Stage 1                  | 640    | 612                                                                               | -      | 526   | 521                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Stage 2                  | 510    | 489                                                                               | -      | 622   | 611                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Platoon blocked, %       |        |                                                                                   |        |       |                                                                                   |       |        | -                                                                                 | -    |       | -                                                                                   | -    |
| Mov Cap-1 Maneuver       | 206    | 235                                                                               | 733    | 205   | 255                                                                               | 549   | 1252   | -                                                                                 | -    | 984   | -                                                                                   | -    |
| Mov Cap-2 Maneuver       | 206    | 235                                                                               | -      | 205   | 255                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Stage 1                  | 636    | 583                                                                               | -      | 523   | 518                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Stage 2                  | 462    | 486                                                                               | -      | 551   | 582                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
|                          |        |                                                                                   |        |       |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
|                          |        |                                                                                   |        |       |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
| Approach                 | EB     |                                                                                   | WB     |       | NB                                                                                |       | SB     |                                                                                   |      |       |                                                                                     |      |
| HCM Control Delay, s     | 21.1   |                                                                                   | 24.4   |       | 0.1                                                                               |       | 1      |                                                                                   |      |       |                                                                                     |      |
| HCM LOS                  | C      |                                                                                   | C      |       |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
|                          |        |                                                                                   |        |       |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
| Minor Lane/Major Mvmt    | NBL    | NBT                                                                               | NBR    | EBLn1 | WBLn1                                                                             | SBL   | SBT    | SBR                                                                               |      |       |                                                                                     |      |
| Capacity (veh/h)         | 1252   | -                                                                                 | -      | 272   | 271                                                                               | 984   | -      | -                                                                                 |      |       |                                                                                     |      |
| HCM Lane V/C Ratio       | 0.004  | -                                                                                 | -      | 0.18  | 0.321                                                                             | 0.039 | -      | -                                                                                 |      |       |                                                                                     |      |
| HCM Control Delay (s)    | 7.9    | 0                                                                                 | -      | 21.1  | 24.4                                                                              | 8.8   | 0      | -                                                                                 |      |       |                                                                                     |      |
| HCM Lane LOS             | A      | A                                                                                 | -      | C     | C                                                                                 | A     | A      | -                                                                                 |      |       |                                                                                     |      |
| HCM 95th %tile Q(veh)    | 0      | -                                                                                 | -      | 0.6   | 1.3                                                                               | 0.1   | -      | -                                                                                 |      |       |                                                                                     |      |

| Intersection             |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|--------------------------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------|
| Int Delay, s/veh         | 0                                                                                 |        |       |                                                                                   |                                                                                   |       |
| Movement                 | EBT                                                                               | EBR    | WBL   | WBT                                                                               | NBL                                                                               | NBR   |
| Lane Configurations      |  |        |       |  |  |       |
| Traffic Vol, veh/h       | 180                                                                               | 0      | 0     | 80                                                                                | 0                                                                                 | 0     |
| Future Vol, veh/h        | 180                                                                               | 0      | 0     | 80                                                                                | 0                                                                                 | 0     |
| Conflicting Peds, #/hr   | 0                                                                                 | 0      | 0     | 0                                                                                 | 0                                                                                 | 0     |
| Sign Control             | Free                                                                              | Free   | Free  | Free                                                                              | Stop                                                                              | Stop  |
| RT Channelized           | -                                                                                 | None   | -     | None                                                                              | -                                                                                 | None  |
| Storage Length           | -                                                                                 | -      | -     | -                                                                                 | 0                                                                                 | -     |
| Veh in Median Storage, # | 0                                                                                 | -      | -     | 0                                                                                 | 0                                                                                 | -     |
| Grade, %                 | 0                                                                                 | -      | -     | 0                                                                                 | 0                                                                                 | -     |
| Peak Hour Factor         | 92                                                                                | 92     | 92    | 92                                                                                | 92                                                                                | 92    |
| Heavy Vehicles, %        | 2                                                                                 | 2      | 2     | 2                                                                                 | 2                                                                                 | 2     |
| Mvmt Flow                | 196                                                                               | 0      | 0     | 87                                                                                | 0                                                                                 | 0     |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Major/Minor              | Major1                                                                            | Major2 |       | Minor1                                                                            |                                                                                   |       |
| Conflicting Flow All     | 0                                                                                 | 0      | 196   | 0                                                                                 | 283                                                                               | 196   |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 196                                                                               | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 87                                                                                | -     |
| Critical Hdwy            | -                                                                                 | -      | 4.12  | -                                                                                 | 6.42                                                                              | 6.22  |
| Critical Hdwy Stg 1      | -                                                                                 | -      | -     | -                                                                                 | 5.42                                                                              | -     |
| Critical Hdwy Stg 2      | -                                                                                 | -      | -     | -                                                                                 | 5.42                                                                              | -     |
| Follow-up Hdwy           | -                                                                                 | -      | 2.218 | -                                                                                 | 3.518                                                                             | 3.318 |
| Pot Cap-1 Maneuver       | -                                                                                 | -      | 1377  | -                                                                                 | 707                                                                               | 845   |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 837                                                                               | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 936                                                                               | -     |
| Platoon blocked, %       | -                                                                                 | -      |       | -                                                                                 |                                                                                   |       |
| Mov Cap-1 Maneuver       | -                                                                                 | -      | 1377  | -                                                                                 | 707                                                                               | 845   |
| Mov Cap-2 Maneuver       | -                                                                                 | -      | -     | -                                                                                 | 707                                                                               | -     |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 837                                                                               | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 936                                                                               | -     |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Approach                 | EB                                                                                | WB     |       | NB                                                                                |                                                                                   |       |
| HCM Control Delay, s     | 0                                                                                 | 0      |       | 0                                                                                 |                                                                                   |       |
| HCM LOS                  |                                                                                   |        |       | A                                                                                 |                                                                                   |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Minor Lane/Major Mvmt    | NBLn1                                                                             | EBT    | EBR   | WBL                                                                               | WBT                                                                               |       |
| Capacity (veh/h)         | -                                                                                 | -      | -     | 1377                                                                              | -                                                                                 |       |
| HCM Lane V/C Ratio       | -                                                                                 | -      | -     | -                                                                                 | -                                                                                 |       |
| HCM Control Delay (s)    | 0                                                                                 | -      | -     | 0                                                                                 | -                                                                                 |       |
| HCM Lane LOS             | A                                                                                 | -      | -     | A                                                                                 | -                                                                                 |       |
| HCM 95th %tile Q(veh)    | -                                                                                 | -      | -     | 0                                                                                 | -                                                                                 |       |

| Intersection             |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
|--------------------------|--------|-----------------------------------------------------------------------------------|------|--------|-----------------------------------------------------------------------------------|------|--------|-----------------------------------------------------------------------------------|-------|--------|-------------------------------------------------------------------------------------|-------|
| Int Delay, s/veh         | 6.1    |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
| Movement                 | EBL    | EBT                                                                               | EBR  | WBL    | WBT                                                                               | WBR  | NBL    | NBT                                                                               | NBR   | SBL    | SBT                                                                                 | SBR   |
| Lane Configurations      |        |  |      |        |  |      |        |  |       |        |  |       |
| Traffic Vol, veh/h       | 25     | 150                                                                               | 10   | 20     | 60                                                                                | 5    | 5      | 80                                                                                | 50    | 15     | 50                                                                                  | 15    |
| Future Vol, veh/h        | 25     | 150                                                                               | 10   | 20     | 60                                                                                | 5    | 5      | 80                                                                                | 50    | 15     | 50                                                                                  | 15    |
| Conflicting Peds, #/hr   | 0      | 0                                                                                 | 0    | 0      | 0                                                                                 | 0    | 0      | 0                                                                                 | 0     | 0      | 0                                                                                   | 0     |
| Sign Control             | Free   | Free                                                                              | Free | Free   | Free                                                                              | Free | Stop   | Stop                                                                              | Stop  | Stop   | Stop                                                                                | Stop  |
| RT Channelized           | -      | -                                                                                 | None | -      | -                                                                                 | None | -      | -                                                                                 | None  | -      | -                                                                                   | None  |
| Storage Length           | -      | -                                                                                 | -    | -      | -                                                                                 | -    | -      | -                                                                                 | -     | -      | -                                                                                   | -     |
| Veh in Median Storage, # | -      | 0                                                                                 | -    | -      | 0                                                                                 | -    | -      | 0                                                                                 | -     | -      | 0                                                                                   | -     |
| Grade, %                 | -      | 0                                                                                 | -    | -      | 0                                                                                 | -    | -      | 0                                                                                 | -     | -      | 0                                                                                   | -     |
| Peak Hour Factor         | 92     | 92                                                                                | 92   | 92     | 92                                                                                | 92   | 92     | 92                                                                                | 92    | 92     | 92                                                                                  | 92    |
| Heavy Vehicles, %        | 2      | 2                                                                                 | 2    | 2      | 2                                                                                 | 2    | 2      | 2                                                                                 | 2     | 2      | 2                                                                                   | 2     |
| Mvmt Flow                | 27     | 163                                                                               | 11   | 22     | 65                                                                                | 5    | 5      | 87                                                                                | 54    | 16     | 54                                                                                  | 16    |
|                          |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
| Major/Minor              | Major1 |                                                                                   |      | Major2 |                                                                                   |      | Minor1 |                                                                                   |       | Minor2 |                                                                                     |       |
| Conflicting Flow All     | 70     | 0                                                                                 | 0    | 174    | 0                                                                                 | 0    | 370    | 337                                                                               | 169   | 405    | 340                                                                                 | 68    |
| Stage 1                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 223    | 223                                                                               | -     | 112    | 112                                                                                 | -     |
| Stage 2                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 147    | 114                                                                               | -     | 293    | 228                                                                                 | -     |
| Critical Hdwy            | 4.12   | -                                                                                 | -    | 4.12   | -                                                                                 | -    | 7.12   | 6.52                                                                              | 6.22  | 7.12   | 6.52                                                                                | 6.22  |
| Critical Hdwy Stg 1      | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 6.12   | 5.52                                                                              | -     | 6.12   | 5.52                                                                                | -     |
| Critical Hdwy Stg 2      | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 6.12   | 5.52                                                                              | -     | 6.12   | 5.52                                                                                | -     |
| Follow-up Hdwy           | 2.218  | -                                                                                 | -    | 2.218  | -                                                                                 | -    | 3.518  | 4.018                                                                             | 3.318 | 3.518  | 4.018                                                                               | 3.318 |
| Pot Cap-1 Maneuver       | 1531   | -                                                                                 | -    | 1403   | -                                                                                 | -    | 587    | 584                                                                               | 875   | 556    | 582                                                                                 | 995   |
| Stage 1                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 780    | 719                                                                               | -     | 893    | 803                                                                                 | -     |
| Stage 2                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 856    | 801                                                                               | -     | 715    | 715                                                                                 | -     |
| Platoon blocked, %       |        | -                                                                                 | -    |        | -                                                                                 | -    |        |                                                                                   |       |        |                                                                                     |       |
| Mov Cap-1 Maneuver       | 1531   | -                                                                                 | -    | 1403   | -                                                                                 | -    | 520    | 563                                                                               | 875   | 448    | 561                                                                                 | 995   |
| Mov Cap-2 Maneuver       | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 520    | 563                                                                               | -     | 448    | 561                                                                                 | -     |
| Stage 1                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 764    | 705                                                                               | -     | 875    | 790                                                                                 | -     |
| Stage 2                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 772    | 788                                                                               | -     | 576    | 701                                                                                 | -     |
|                          |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
|                          |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
| Approach                 | EB     |                                                                                   |      | WB     |                                                                                   |      | NB     |                                                                                   |       | SB     |                                                                                     |       |
| HCM Control Delay, s     | 1      |                                                                                   |      | 1.8    |                                                                                   |      | 12.2   |                                                                                   |       | 12.3   |                                                                                     |       |
| HCM LOS                  |        |                                                                                   |      |        |                                                                                   |      | B      |                                                                                   |       | B      |                                                                                     |       |
|                          |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
| Minor Lane/Major Mvmt    | NBLn1  | EBL                                                                               | EBT  | EBR    | WBL                                                                               | WBT  | WBR    | SBLn1                                                                             |       |        |                                                                                     |       |
| Capacity (veh/h)         | 646    | 1531                                                                              | -    | -      | 1403                                                                              | -    | -      | 581                                                                               |       |        |                                                                                     |       |
| HCM Lane V/C Ratio       | 0.227  | 0.018                                                                             | -    | -      | 0.015                                                                             | -    | -      | 0.15                                                                              |       |        |                                                                                     |       |
| HCM Control Delay (s)    | 12.2   | 7.4                                                                               | 0    | -      | 7.6                                                                               | 0    | -      | 12.3                                                                              |       |        |                                                                                     |       |
| HCM Lane LOS             | B      | A                                                                                 | A    | -      | A                                                                                 | A    | -      | B                                                                                 |       |        |                                                                                     |       |
| HCM 95th %tile O(veh)    | 0.9    | 0.1                                                                               | -    | -      | 0                                                                                 | -    | -      | 0.5                                                                               |       |        |                                                                                     |       |



| Intersection             |        |       |        |       |       |        |       |      |        |       |      |      |
|--------------------------|--------|-------|--------|-------|-------|--------|-------|------|--------|-------|------|------|
| Int Delay, s/veh         | 5.4    |       |        |       |       |        |       |      |        |       |      |      |
| Movement                 | EBL    | EBT   | EBR    | WBL   | WBT   | WBR    | NBL   | NBT  | NBR    | SBL   | SBT  | SBR  |
| Lane Configurations      |        | ↕     |        |       | ↕     |        |       | ↕    |        |       | ↕    |      |
| Traffic Vol, veh/h       | 10     | 25    | 15     | 50    | 50    | 30     | 15    | 325  | 25     | 15    | 465  | 5    |
| Future Vol, veh/h        | 10     | 25    | 15     | 50    | 50    | 30     | 15    | 325  | 25     | 15    | 465  | 5    |
| Conflicting Peds, #/hr   | 0      | 0     | 0      | 0     | 0     | 0      | 0     | 0    | 0      | 0     | 0    | 0    |
| Sign Control             | Stop   | Stop  | Stop   | Stop  | Stop  | Stop   | Free  | Free | Free   | Free  | Free | Free |
| RT Channelized           | -      | -     | None   | -     | -     | None   | -     | -    | None   | -     | -    | None |
| Storage Length           | -      | -     | -      | -     | -     | -      | -     | -    | -      | -     | -    | -    |
| Veh in Median Storage, # | -      | 0     | -      | -     | 0     | -      | -     | 0    | -      | -     | 0    | -    |
| Grade, %                 | -      | 0     | -      | -     | 0     | -      | -     | 0    | -      | -     | 0    | -    |
| Peak Hour Factor         | 92     | 92    | 92     | 92    | 92    | 92     | 92    | 92   | 92     | 92    | 92   | 92   |
| Heavy Vehicles, %        | 2      | 2     | 2      | 2     | 2     | 2      | 2     | 2    | 2      | 2     | 2    | 2    |
| Mvmt Flow                | 11     | 27    | 16     | 54    | 54    | 33     | 16    | 353  | 27     | 16    | 505  | 5    |
|                          |        |       |        |       |       |        |       |      |        |       |      |      |
| Major/Minor              | Minor2 |       | Minor1 |       |       | Major1 |       |      | Major2 |       |      |      |
| Conflicting Flow All     | 982    | 952   | 508    | 960   | 941   | 367    | 510   | 0    | 0      | 380   | 0    | 0    |
| Stage 1                  | 540    | 540   | -      | 399   | 399   | -      | -     | -    | -      | -     | -    | -    |
| Stage 2                  | 442    | 412   | -      | 561   | 542   | -      | -     | -    | -      | -     | -    | -    |
| Critical Hdwy            | 7.12   | 6.52  | 6.22   | 7.12  | 6.52  | 6.22   | 4.12  | -    | -      | 4.12  | -    | -    |
| Critical Hdwy Stg 1      | 6.12   | 5.52  | -      | 6.12  | 5.52  | -      | -     | -    | -      | -     | -    | -    |
| Critical Hdwy Stg 2      | 6.12   | 5.52  | -      | 6.12  | 5.52  | -      | -     | -    | -      | -     | -    | -    |
| Follow-up Hdwy           | 3.518  | 4.018 | 3.318  | 3.518 | 4.018 | 3.318  | 2.218 | -    | -      | 2.218 | -    | -    |
| Pot Cap-1 Maneuver       | 228    | 259   | 565    | 236   | 263   | 678    | 1055  | -    | -      | 1178  | -    | -    |
| Stage 1                  | 526    | 521   | -      | 627   | 602   | -      | -     | -    | -      | -     | -    | -    |
| Stage 2                  | 594    | 594   | -      | 512   | 520   | -      | -     | -    | -      | -     | -    | -    |
| Platoon blocked, %       |        |       |        |       |       |        |       | -    | -      |       | -    | -    |
| Mov Cap-1 Maneuver       | 176    | 249   | 565    | 204   | 253   | 678    | 1055  | -    | -      | 1178  | -    | -    |
| Mov Cap-2 Maneuver       | 176    | 249   | -      | 204   | 253   | -      | -     | -    | -      | -     | -    | -    |
| Stage 1                  | 516    | 511   | -      | 615   | 591   | -      | -     | -    | -      | -     | -    | -    |
| Stage 2                  | 504    | 583   | -      | 462   | 510   | -      | -     | -    | -      | -     | -    | -    |
|                          |        |       |        |       |       |        |       |      |        |       |      |      |
| Approach                 | EB     |       | WB     |       |       | NB     |       |      | SB     |       |      |      |
| HCM Control Delay, s     | 21.5   |       | 32.7   |       |       | 0.3    |       |      | 0.3    |       |      |      |
| HCM LOS                  | C      |       | D      |       |       |        |       |      |        |       |      |      |
|                          |        |       |        |       |       |        |       |      |        |       |      |      |
| Minor Lane/Major Mvmt    | NBL    | NBT   | NBR    | EBLn1 | WBLn1 | SBL    | SBT   | SBR  |        |       |      |      |
| Capacity (veh/h)         | 1055   | -     | -      | 272   | 267   | 1178   | -     | -    |        |       |      |      |
| HCM Lane V/C Ratio       | 0.015  | -     | -      | 0.2   | 0.529 | 0.014  | -     | -    |        |       |      |      |
| HCM Control Delay (s)    | 8.5    | 0     | -      | 21.5  | 32.7  | 8.1    | 0     | -    |        |       |      |      |
| HCM Lane LOS             | A      | A     | -      | C     | D     | A      | A     | -    |        |       |      |      |
| HCM 95th %tile Q(veh)    | 0      | -     | -      | 0.7   | 2.9   | 0      | -     | -    |        |       |      |      |

| Intersection             |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|--------------------------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------|
| Int Delay, s/veh         | 0                                                                                 |        |       |                                                                                   |                                                                                   |       |
| Movement                 | EBT                                                                               | EBR    | WBL   | WBT                                                                               | NBL                                                                               | NBR   |
| Lane Configurations      |  |        |       |  |  |       |
| Traffic Vol, veh/h       | 65                                                                                | 0      | 0     | 130                                                                               | 0                                                                                 | 0     |
| Future Vol, veh/h        | 65                                                                                | 0      | 0     | 130                                                                               | 0                                                                                 | 0     |
| Conflicting Peds, #/hr   | 0                                                                                 | 0      | 0     | 0                                                                                 | 0                                                                                 | 0     |
| Sign Control             | Free                                                                              | Free   | Free  | Free                                                                              | Stop                                                                              | Stop  |
| RT Channelized           | -                                                                                 | None   | -     | None                                                                              | -                                                                                 | None  |
| Storage Length           | -                                                                                 | -      | -     | -                                                                                 | 0                                                                                 | -     |
| Veh in Median Storage, # | 0                                                                                 | -      | -     | 0                                                                                 | 0                                                                                 | -     |
| Grade, %                 | 0                                                                                 | -      | -     | 0                                                                                 | 0                                                                                 | -     |
| Peak Hour Factor         | 92                                                                                | 92     | 92    | 92                                                                                | 92                                                                                | 92    |
| Heavy Vehicles, %        | 2                                                                                 | 2      | 2     | 2                                                                                 | 2                                                                                 | 2     |
| Mvmt Flow                | 71                                                                                | 0      | 0     | 141                                                                               | 0                                                                                 | 0     |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Major/Minor              | Major1                                                                            | Major2 |       | Minor1                                                                            |                                                                                   |       |
| Conflicting Flow All     | 0                                                                                 | 0      | 71    | 0                                                                                 | 212                                                                               | 71    |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 71                                                                                | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 141                                                                               | -     |
| Critical Hdwy            | -                                                                                 | -      | 4.12  | -                                                                                 | 6.42                                                                              | 6.22  |
| Critical Hdwy Stg 1      | -                                                                                 | -      | -     | -                                                                                 | 5.42                                                                              | -     |
| Critical Hdwy Stg 2      | -                                                                                 | -      | -     | -                                                                                 | 5.42                                                                              | -     |
| Follow-up Hdwy           | -                                                                                 | -      | 2.218 | -                                                                                 | 3.518                                                                             | 3.318 |
| Pot Cap-1 Maneuver       | -                                                                                 | -      | 1529  | -                                                                                 | 776                                                                               | 991   |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 952                                                                               | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 886                                                                               | -     |
| Platoon blocked, %       | -                                                                                 | -      |       | -                                                                                 |                                                                                   |       |
| Mov Cap-1 Maneuver       | -                                                                                 | -      | 1529  | -                                                                                 | 776                                                                               | 991   |
| Mov Cap-2 Maneuver       | -                                                                                 | -      | -     | -                                                                                 | 776                                                                               | -     |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 952                                                                               | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 886                                                                               | -     |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Approach                 | EB                                                                                | WB     |       | NB                                                                                |                                                                                   |       |
| HCM Control Delay, s     | 0                                                                                 | 0      |       | 0                                                                                 |                                                                                   |       |
| HCM LOS                  | A                                                                                 |        |       |                                                                                   |                                                                                   |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Minor Lane/Major Mvmt    | NBLn1                                                                             | EBT    | EBR   | WBL                                                                               | WBT                                                                               |       |
| Capacity (veh/h)         | -                                                                                 | -      | -     | 1529                                                                              | -                                                                                 |       |
| HCM Lane V/C Ratio       | -                                                                                 | -      | -     | -                                                                                 | -                                                                                 |       |
| HCM Control Delay (s)    | 0                                                                                 | -      | -     | 0                                                                                 | -                                                                                 |       |
| HCM Lane LOS             | A                                                                                 | -      | -     | A                                                                                 | -                                                                                 |       |
| HCM 95th %tile Q(veh)    | -                                                                                 | -      | -     | 0                                                                                 | -                                                                                 |       |

| Intersection             |        |              |      |        |              |      |        |              |       |        |              |       |
|--------------------------|--------|--------------|------|--------|--------------|------|--------|--------------|-------|--------|--------------|-------|
| Int Delay, s/veh         | 7.7    |              |      |        |              |      |        |              |       |        |              |       |
| Movement                 | EBL    | EBT          | EBR  | WBL    | WBT          | WBR  | NBL    | NBT          | NBR   | SBL    | SBT          | SBR   |
| Lane Configurations      |        | <div>↕</div> |      |        | <div>↕</div> |      |        | <div>↕</div> |       |        | <div>↕</div> |       |
| Traffic Vol, veh/h       | 10     | 45           | 10   | 65     | 105          | 20   | 5      | 60           | 25    | 15     | 120          | 20    |
| Future Vol, veh/h        | 10     | 45           | 10   | 65     | 105          | 20   | 5      | 60           | 25    | 15     | 120          | 20    |
| Conflicting Peds, #/hr   | 0      | 0            | 0    | 0      | 0            | 0    | 0      | 0            | 0     | 0      | 0            | 0     |
| Sign Control             | Free   | Free         | Free | Free   | Free         | Free | Stop   | Stop         | Stop  | Stop   | Stop         | Stop  |
| RT Channelized           | -      | -            | None | -      | -            | None | -      | -            | None  | -      | -            | None  |
| Storage Length           | -      | -            | -    | -      | -            | -    | -      | -            | -     | -      | -            | -     |
| Veh in Median Storage, # | -      | 0            | -    | -      | 0            | -    | -      | 0            | -     | -      | 0            | -     |
| Grade, %                 | -      | 0            | -    | -      | 0            | -    | -      | 0            | -     | -      | 0            | -     |
| Peak Hour Factor         | 92     | 92           | 92   | 92     | 92           | 92   | 92     | 92           | 92    | 92     | 92           | 92    |
| Heavy Vehicles, %        | 2      | 2            | 2    | 2      | 2            | 2    | 2      | 2            | 2     | 2      | 2            | 2     |
| Mvmt Flow                | 11     | 49           | 11   | 71     | 114          | 22   | 5      | 65           | 27    | 16     | 130          | 22    |
|                          |        |              |      |        |              |      |        |              |       |        |              |       |
| Major/Minor              | Major1 |              |      | Major2 |              |      | Minor1 |              |       | Minor2 |              |       |
| Conflicting Flow All     | 136    | 0            | 0    | 60     | 0            | 0    | 420    | 355          | 55    | 390    | 349          | 125   |
| Stage 1                  | -      | -            | -    | -      | -            | -    | 77     | 77           | -     | 267    | 267          | -     |
| Stage 2                  | -      | -            | -    | -      | -            | -    | 343    | 278          | -     | 123    | 82           | -     |
| Critical Hdwy            | 4.12   | -            | -    | 4.12   | -            | -    | 7.12   | 6.52         | 6.22  | 7.12   | 6.52         | 6.22  |
| Critical Hdwy Stg 1      | -      | -            | -    | -      | -            | -    | 6.12   | 5.52         | -     | 6.12   | 5.52         | -     |
| Critical Hdwy Stg 2      | -      | -            | -    | -      | -            | -    | 6.12   | 5.52         | -     | 6.12   | 5.52         | -     |
| Follow-up Hdwy           | 2.218  | -            | -    | 2.218  | -            | -    | 3.518  | 4.018        | 3.318 | 3.518  | 4.018        | 3.318 |
| Pot Cap-1 Maneuver       | 1448   | -            | -    | 1544   | -            | -    | 544    | 571          | 1012  | 569    | 575          | 926   |
| Stage 1                  | -      | -            | -    | -      | -            | -    | 932    | 831          | -     | 738    | 688          | -     |
| Stage 2                  | -      | -            | -    | -      | -            | -    | 672    | 680          | -     | 881    | 827          | -     |
| Platoon blocked, %       |        | -            | -    |        | -            | -    |        |              |       |        |              |       |
| Mov Cap-1 Maneuver       | 1448   | -            | -    | 1544   | -            | -    | 415    | 538          | 1012  | 481    | 542          | 926   |
| Mov Cap-2 Maneuver       | -      | -            | -    | -      | -            | -    | 415    | 538          | -     | 481    | 542          | -     |
| Stage 1                  | -      | -            | -    | -      | -            | -    | 925    | 824          | -     | 732    | 654          | -     |
| Stage 2                  | -      | -            | -    | -      | -            | -    | 499    | 646          | -     | 783    | 820          | -     |
|                          |        |              |      |        |              |      |        |              |       |        |              |       |
|                          |        |              |      |        |              |      |        |              |       |        |              |       |
| Approach                 | EB     |              |      | WB     |              |      | NB     |              |       | SB     |              |       |
| HCM Control Delay, s     | 1.2    |              |      | 2.5    |              |      | 12.1   |              |       | 14.1   |              |       |
| HCM LOS                  |        |              |      |        |              |      | B      |              |       | B      |              |       |
|                          |        |              |      |        |              |      |        |              |       |        |              |       |
| Minor Lane/Major Mvmt    | NBLn1  | EBL          | EBT  | EBR    | WBL          | WBT  | WBR    | SBLn1        |       |        |              |       |
| Capacity (veh/h)         | 607    | 1448         | -    | -      | 1544         | -    | -      | 565          |       |        |              |       |
| HCM Lane V/C Ratio       | 0.161  | 0.008        | -    | -      | 0.046        | -    | -      | 0.298        |       |        |              |       |
| HCM Control Delay (s)    | 12.1   | 7.5          | 0    | -      | 7.4          | 0    | -      | 14.1         |       |        |              |       |
| HCM Lane LOS             | B      | A            | A    | -      | A            | A    | -      | B            |       |        |              |       |
| HCM 95th %tile Q(veh)    | 0.6    | 0            | -    | -      | 0.1          | -    | -      | 1.2          |       |        |              |       |

| Intersection             |        |                                                                                   |        |       |                                                                                   |        |       |                                                                                   |        |       |                                                                                     |      |
|--------------------------|--------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|--------|-------|-------------------------------------------------------------------------------------|------|
| Int Delay, s/veh         | 3.3    |                                                                                   |        |       |                                                                                   |        |       |                                                                                   |        |       |                                                                                     |      |
| Movement                 | EBL    | EBT                                                                               | EBR    | WBL   | WBT                                                                               | WBR    | NBL   | NBT                                                                               | NBR    | SBL   | SBT                                                                                 | SBR  |
| Lane Configurations      |        |  |        |       |  |        |       |  |        |       |  |      |
| Traffic Vol, veh/h       | 5      | 30                                                                                | 10     | 35    | 20                                                                                | 25     | 5     | 435                                                                               | 115    | 35    | 285                                                                                 | 5    |
| Future Vol, veh/h        | 5      | 30                                                                                | 10     | 35    | 20                                                                                | 25     | 5     | 435                                                                               | 115    | 35    | 285                                                                                 | 5    |
| Conflicting Peds, #/hr   | 0      | 0                                                                                 | 0      | 0     | 0                                                                                 | 0      | 0     | 0                                                                                 | 0      | 0     | 0                                                                                   | 0    |
| Sign Control             | Stop   | Stop                                                                              | Stop   | Stop  | Stop                                                                              | Stop   | Free  | Free                                                                              | Free   | Free  | Free                                                                                | Free |
| RT Channelized           | -      | -                                                                                 | None   | -     | -                                                                                 | None   | -     | -                                                                                 | None   | -     | -                                                                                   | None |
| Storage Length           | -      | -                                                                                 | -      | -     | -                                                                                 | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Veh in Median Storage, # | -      | 0                                                                                 | -      | -     | 0                                                                                 | -      | -     | 0                                                                                 | -      | -     | 0                                                                                   | -    |
| Grade, %                 | -      | 0                                                                                 | -      | -     | 0                                                                                 | -      | -     | 0                                                                                 | -      | -     | 0                                                                                   | -    |
| Peak Hour Factor         | 92     | 92                                                                                | 92     | 92    | 92                                                                                | 92     | 92    | 92                                                                                | 92     | 92    | 92                                                                                  | 92   |
| Heavy Vehicles, %        | 2      | 2                                                                                 | 2      | 2     | 2                                                                                 | 2      | 2     | 2                                                                                 | 2      | 2     | 2                                                                                   | 2    |
| Mvmt Flow                | 5      | 33                                                                                | 11     | 38    | 22                                                                                | 27     | 5     | 473                                                                               | 125    | 38    | 310                                                                                 | 5    |
|                          |        |                                                                                   |        |       |                                                                                   |        |       |                                                                                   |        |       |                                                                                     |      |
| Major/Minor              | Minor2 |                                                                                   | Minor1 |       |                                                                                   | Major1 |       |                                                                                   | Major2 |       |                                                                                     |      |
| Conflicting Flow All     | 959    | 997                                                                               | 313    | 957   | 937                                                                               | 536    | 315   | 0                                                                                 | 0      | 598   | 0                                                                                   | 0    |
| Stage 1                  | 389    | 389                                                                               | -      | 546   | 546                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Stage 2                  | 570    | 608                                                                               | -      | 411   | 391                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Critical Hdwy            | 7.12   | 6.52                                                                              | 6.22   | 7.12  | 6.52                                                                              | 6.22   | 4.12  | -                                                                                 | -      | 4.12  | -                                                                                   | -    |
| Critical Hdwy Stg 1      | 6.12   | 5.52                                                                              | -      | 6.12  | 5.52                                                                              | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Critical Hdwy Stg 2      | 6.12   | 5.52                                                                              | -      | 6.12  | 5.52                                                                              | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Follow-up Hdwy           | 3.518  | 4.018                                                                             | 3.318  | 3.518 | 4.018                                                                             | 3.318  | 2.218 | -                                                                                 | -      | 2.218 | -                                                                                   | -    |
| Pot Cap-1 Maneuver       | 237    | 244                                                                               | 727    | 237   | 265                                                                               | 545    | 1245  | -                                                                                 | -      | 979   | -                                                                                   | -    |
| Stage 1                  | 635    | 608                                                                               | -      | 522   | 518                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Stage 2                  | 506    | 486                                                                               | -      | 618   | 607                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Platoon blocked, %       |        |                                                                                   |        |       |                                                                                   |        |       | -                                                                                 | -      |       | -                                                                                   | -    |
| Mov Cap-1 Maneuver       | 202    | 231                                                                               | 727    | 200   | 251                                                                               | 545    | 1245  | -                                                                                 | -      | 979   | -                                                                                   | -    |
| Mov Cap-2 Maneuver       | 202    | 231                                                                               | -      | 200   | 251                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Stage 1                  | 631    | 579                                                                               | -      | 519   | 515                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Stage 2                  | 458    | 483                                                                               | -      | 547   | 578                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
|                          |        |                                                                                   |        |       |                                                                                   |        |       |                                                                                   |        |       |                                                                                     |      |
| Approach                 | EB     |                                                                                   | WB     |       |                                                                                   | NB     |       |                                                                                   | SB     |       |                                                                                     |      |
| HCM Control Delay, s     | 21.5   |                                                                                   | 25     |       |                                                                                   | 0.1    |       |                                                                                   | 1      |       |                                                                                     |      |
| HCM LOS                  | C      |                                                                                   | D      |       |                                                                                   |        |       |                                                                                   |        |       |                                                                                     |      |
|                          |        |                                                                                   |        |       |                                                                                   |        |       |                                                                                   |        |       |                                                                                     |      |
| Minor Lane/Major Mvmt    | NBL    | NBT                                                                               | NBR    | EBLn1 | WBLn1                                                                             | SBL    | SBT   | SBR                                                                               |        |       |                                                                                     |      |
| Capacity (veh/h)         | 1245   | -                                                                                 | -      | 267   | 266                                                                               | 979    | -     | -                                                                                 |        |       |                                                                                     |      |
| HCM Lane V/C Ratio       | 0.004  | -                                                                                 | -      | 0.183 | 0.327                                                                             | 0.039  | -     | -                                                                                 |        |       |                                                                                     |      |
| HCM Control Delay (s)    | 7.9    | 0                                                                                 | -      | 21.5  | 25                                                                                | 8.8    | 0     | -                                                                                 |        |       |                                                                                     |      |
| HCM Lane LOS             | A      | A                                                                                 | -      | C     | D                                                                                 | A      | A     | -                                                                                 |        |       |                                                                                     |      |
| HCM 95th %tile Q(veh)    | 0      | -                                                                                 | -      | 0.7   | 1.4                                                                               | 0.1    | -     | -                                                                                 |        |       |                                                                                     |      |

| Intersection             |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|--------------------------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------|
| Int Delay, s/veh         | 0                                                                                 |        |       |                                                                                   |                                                                                   |       |
| Movement                 | EBT                                                                               | EBR    | WBL   | WBT                                                                               | NBL                                                                               | NBR   |
| Lane Configurations      |  |        |       |  |  |       |
| Traffic Vol, veh/h       | 180                                                                               | 0      | 0     | 85                                                                                | 0                                                                                 | 0     |
| Future Vol, veh/h        | 180                                                                               | 0      | 0     | 85                                                                                | 0                                                                                 | 0     |
| Conflicting Peds, #/hr   | 0                                                                                 | 0      | 0     | 0                                                                                 | 0                                                                                 | 0     |
| Sign Control             | Free                                                                              | Free   | Free  | Free                                                                              | Stop                                                                              | Stop  |
| RT Channelized           | -                                                                                 | None   | -     | None                                                                              | -                                                                                 | None  |
| Storage Length           | -                                                                                 | -      | -     | -                                                                                 | 0                                                                                 | -     |
| Veh in Median Storage, # | 0                                                                                 | -      | -     | 0                                                                                 | 0                                                                                 | -     |
| Grade, %                 | 0                                                                                 | -      | -     | 0                                                                                 | 0                                                                                 | -     |
| Peak Hour Factor         | 92                                                                                | 92     | 92    | 92                                                                                | 92                                                                                | 92    |
| Heavy Vehicles, %        | 2                                                                                 | 2      | 2     | 2                                                                                 | 2                                                                                 | 2     |
| Mvmt Flow                | 196                                                                               | 0      | 0     | 92                                                                                | 0                                                                                 | 0     |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Major/Minor              | Major1                                                                            | Major2 |       | Minor1                                                                            |                                                                                   |       |
| Conflicting Flow All     | 0                                                                                 | 0      | 196   | 0                                                                                 | 288                                                                               | 196   |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 196                                                                               | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 92                                                                                | -     |
| Critical Hdwy            | -                                                                                 | -      | 4.12  | -                                                                                 | 6.42                                                                              | 6.22  |
| Critical Hdwy Stg 1      | -                                                                                 | -      | -     | -                                                                                 | 5.42                                                                              | -     |
| Critical Hdwy Stg 2      | -                                                                                 | -      | -     | -                                                                                 | 5.42                                                                              | -     |
| Follow-up Hdwy           | -                                                                                 | -      | 2.218 | -                                                                                 | 3.518                                                                             | 3.318 |
| Pot Cap-1 Maneuver       | -                                                                                 | -      | 1377  | -                                                                                 | 702                                                                               | 845   |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 837                                                                               | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 932                                                                               | -     |
| Platoon blocked, %       | -                                                                                 | -      |       | -                                                                                 |                                                                                   |       |
| Mov Cap-1 Maneuver       | -                                                                                 | -      | 1377  | -                                                                                 | 702                                                                               | 845   |
| Mov Cap-2 Maneuver       | -                                                                                 | -      | -     | -                                                                                 | 702                                                                               | -     |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 837                                                                               | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 932                                                                               | -     |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Approach                 | EB                                                                                | WB     |       | NB                                                                                |                                                                                   |       |
| HCM Control Delay, s     | 0                                                                                 | 0      |       | 0                                                                                 |                                                                                   |       |
| HCM LOS                  | A                                                                                 |        |       |                                                                                   |                                                                                   |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Minor Lane/Major Mvmt    | NBLn1                                                                             | EBT    | EBR   | WBL                                                                               | WBT                                                                               |       |
| Capacity (veh/h)         | -                                                                                 | -      | -     | 1377                                                                              | -                                                                                 |       |
| HCM Lane V/C Ratio       | -                                                                                 | -      | -     | -                                                                                 | -                                                                                 |       |
| HCM Control Delay (s)    | 0                                                                                 | -      | -     | 0                                                                                 | -                                                                                 |       |
| HCM Lane LOS             | A                                                                                 | -      | -     | A                                                                                 | -                                                                                 |       |
| HCM 95th %tile Q(veh)    | -                                                                                 | -      | -     | 0                                                                                 | -                                                                                 |       |

| Intersection             |        |       |      |        |       |      |        |       |       |        |       |       |
|--------------------------|--------|-------|------|--------|-------|------|--------|-------|-------|--------|-------|-------|
| Int Delay, s/veh         | 6.2    |       |      |        |       |      |        |       |       |        |       |       |
| Movement                 | EBL    | EBT   | EBR  | WBL    | WBT   | WBR  | NBL    | NBT   | NBR   | SBL    | SBT   | SBR   |
| Lane Configurations      |        | ↕     |      |        | ↕     |      |        | ↕     |       |        | ↕     |       |
| Traffic Vol, veh/h       | 25     | 150   | 10   | 20     | 60    | 5    | 5      | 85    | 50    | 15     | 50    | 15    |
| Future Vol, veh/h        | 25     | 150   | 10   | 20     | 60    | 5    | 5      | 85    | 50    | 15     | 50    | 15    |
| Conflicting Peds, #/hr   | 0      | 0     | 0    | 0      | 0     | 0    | 0      | 0     | 0     | 0      | 0     | 0     |
| Sign Control             | Free   | Free  | Free | Free   | Free  | Free | Stop   | Stop  | Stop  | Stop   | Stop  | Stop  |
| RT Channelized           | -      | -     | None | -      | -     | None | -      | -     | None  | -      | -     | None  |
| Storage Length           | -      | -     | -    | -      | -     | -    | -      | -     | -     | -      | -     | -     |
| Veh in Median Storage, # | -      | 0     | -    | -      | 0     | -    | -      | 0     | -     | -      | 0     | -     |
| Grade, %                 | -      | 0     | -    | -      | 0     | -    | -      | 0     | -     | -      | 0     | -     |
| Peak Hour Factor         | 92     | 92    | 92   | 92     | 92    | 92   | 92     | 92    | 92    | 92     | 92    | 92    |
| Heavy Vehicles, %        | 2      | 2     | 2    | 2      | 2     | 2    | 2      | 2     | 2     | 2      | 2     | 2     |
| Mvmt Flow                | 27     | 163   | 11   | 22     | 65    | 5    | 5      | 92    | 54    | 16     | 54    | 16    |
|                          |        |       |      |        |       |      |        |       |       |        |       |       |
| Major/Minor              | Major1 |       |      | Major2 |       |      | Minor1 |       |       | Minor2 |       |       |
| Conflicting Flow All     | 70     | 0     | 0    | 174    | 0     | 0    | 370    | 337   | 169   | 408    | 340   | 68    |
| Stage 1                  | -      | -     | -    | -      | -     | -    | 223    | 223   | -     | 112    | 112   | -     |
| Stage 2                  | -      | -     | -    | -      | -     | -    | 147    | 114   | -     | 296    | 228   | -     |
| Critical Hdwy            | 4.12   | -     | -    | 4.12   | -     | -    | 7.12   | 6.52  | 6.22  | 7.12   | 6.52  | 6.22  |
| Critical Hdwy Stg 1      | -      | -     | -    | -      | -     | -    | 6.12   | 5.52  | -     | 6.12   | 5.52  | -     |
| Critical Hdwy Stg 2      | -      | -     | -    | -      | -     | -    | 6.12   | 5.52  | -     | 6.12   | 5.52  | -     |
| Follow-up Hdwy           | 2.218  | -     | -    | 2.218  | -     | -    | 3.518  | 4.018 | 3.318 | 3.518  | 4.018 | 3.318 |
| Pot Cap-1 Maneuver       | 1531   | -     | -    | 1403   | -     | -    | 587    | 584   | 875   | 554    | 582   | 995   |
| Stage 1                  | -      | -     | -    | -      | -     | -    | 780    | 719   | -     | 893    | 803   | -     |
| Stage 2                  | -      | -     | -    | -      | -     | -    | 856    | 801   | -     | 712    | 715   | -     |
| Platoon blocked, %       |        | -     | -    |        | -     | -    |        |       |       |        |       |       |
| Mov Cap-1 Maneuver       | 1531   | -     | -    | 1403   | -     | -    | 520    | 563   | 875   | 442    | 561   | 995   |
| Mov Cap-2 Maneuver       | -      | -     | -    | -      | -     | -    | 520    | 563   | -     | 442    | 561   | -     |
| Stage 1                  | -      | -     | -    | -      | -     | -    | 764    | 705   | -     | 875    | 790   | -     |
| Stage 2                  | -      | -     | -    | -      | -     | -    | 772    | 788   | -     | 569    | 701   | -     |
|                          |        |       |      |        |       |      |        |       |       |        |       |       |
|                          |        |       |      |        |       |      |        |       |       |        |       |       |
| Approach                 | EB     |       |      | WB     |       |      | NB     |       |       | SB     |       |       |
| HCM Control Delay, s     | 1      |       |      | 1.8    |       |      | 12.3   |       |       | 12.3   |       |       |
| HCM LOS                  |        |       |      |        |       |      | B      |       |       | B      |       |       |
|                          |        |       |      |        |       |      |        |       |       |        |       |       |
| Minor Lane/Major Mvmt    | NBLn1  | EBL   | EBT  | EBR    | WBL   | WBT  | WBR    | SBLn1 |       |        |       |       |
| Capacity (veh/h)         | 643    | 1531  | -    | -      | 1403  | -    | -      | 579   |       |        |       |       |
| HCM Lane V/C Ratio       | 0.237  | 0.018 | -    | -      | 0.015 | -    | -      | 0.15  |       |        |       |       |
| HCM Control Delay (s)    | 12.3   | 7.4   | 0    | -      | 7.6   | 0    | -      | 12.3  |       |        |       |       |
| HCM Lane LOS             | B      | A     | A    | -      | A     | A    | -      | B     |       |        |       |       |
| HCM 95th %tile Q(veh)    | 0.9    | 0.1   | -    | -      | 0     | -    | -      | 0.5   |       |        |       |       |

| Intersection             |        |       |        |       |       |            |       |      |        |       |      |      |
|--------------------------|--------|-------|--------|-------|-------|------------|-------|------|--------|-------|------|------|
| Int Delay, s/veh         | 5.5    |       |        |       |       |            |       |      |        |       |      |      |
| Movement                 | EBL    | EBT   | EBR    | WBL   | WBT   | WBR        | NBL   | NBT  | NBR    | SBL   | SBT  | SBR  |
| Lane Configurations      |        | ↕     |        |       | ↕     |            |       | ↕    |        |       | ↕    |      |
| Traffic Vol, veh/h       | 10     | 25    | 15     | 50    | 50    | 30         | 15    | 330  | 25     | 15    | 475  | 5    |
| Future Vol, veh/h        | 10     | 25    | 15     | 50    | 50    | 30         | 15    | 330  | 25     | 15    | 475  | 5    |
| Conflicting Peds, #/hr   | 0      | 0     | 0      | 0     | 0     | 0          | 0     | 0    | 0      | 0     | 0    | 0    |
| Sign Control             | Stop   | Stop  | Stop   | Stop  | Stop  | Stop       | Free  | Free | Free   | Free  | Free | Free |
| RT Channelized           | -      | -     | None   | -     | -     | None       | -     | -    | None   | -     | -    | None |
| Storage Length           | -      | -     | -      | -     | -     | -          | -     | -    | -      | -     | -    | -    |
| Veh in Median Storage, # | -      | 0     | -      | -     | 0     | -          | -     | 0    | -      | -     | 0    | -    |
| Grade, %                 | -      | 0     | -      | -     | 0     | -          | -     | 0    | -      | -     | 0    | -    |
| Peak Hour Factor         | 92     | 92    | 92     | 92    | 92    | 92         | 92    | 92   | 92     | 92    | 92   | 92   |
| Heavy Vehicles, %        | 2      | 2     | 2      | 2     | 2     | 2          | 2     | 2    | 2      | 2     | 2    | 2    |
| Mvmt Flow                | 11     | 27    | 16     | 54    | 54    | 33         | 16    | 359  | 27     | 16    | 516  | 5    |
|                          |        |       |        |       |       |            |       |      |        |       |      |      |
| Major/Minor              | Minor2 |       | Minor1 |       |       | Major1     |       |      | Major2 |       |      |      |
| Conflicting Flow All     | 999    | 969   | 519    | 977   | 958   | 373        | 521   | 0    | 0      | 386   | 0    | 0    |
| Stage 1                  | 551    | 551   | -      | 405   | 405   | -          | -     | -    | -      | -     | -    | -    |
| Stage 2                  | 448    | 418   | -      | 572   | 553   | -          | -     | -    | -      | -     | -    | -    |
| Critical Hdwy            | 7.12   | 6.52  | 6.22   | 7.12  | 6.52  | 6.22       | 4.12  | -    | -      | 4.12  | -    | -    |
| Critical Hdwy Stg 1      | 6.12   | 5.52  | -      | 6.12  | 5.52  | -          | -     | -    | -      | -     | -    | -    |
| Critical Hdwy Stg 2      | 6.12   | 5.52  | -      | 6.12  | 5.52  | -          | -     | -    | -      | -     | -    | -    |
| Follow-up Hdwy           | 3.518  | 4.018 | 3.318  | 3.518 | 4.018 | 3.318      | 2.218 | -    | -      | 2.218 | -    | -    |
| Pot Cap-1 Maneuver       | 222    | 254   | 557    | 230   | 257   | 673        | 1045  | -    | -      | 1172  | -    | -    |
| Stage 1                  | 519    | 515   | -      | 622   | 598   | -          | -     | -    | -      | -     | -    | -    |
| Stage 2                  | 590    | 591   | -      | 505   | 514   | -          | -     | -    | -      | -     | -    | -    |
| Platoon blocked, %       |        |       |        |       |       |            |       | -    | -      |       | -    | -    |
| Mov Cap-1 Maneuver       | 170    | 244   | 557    | 198   | 247   | 673        | 1045  | -    | -      | 1172  | -    | -    |
| Mov Cap-2 Maneuver       | 170    | 244   | -      | 198   | 247   | -          | -     | -    | -      | -     | -    | -    |
| Stage 1                  | 509    | 505   | -      | 610   | 586   | -          | -     | -    | -      | -     | -    | -    |
| Stage 2                  | 499    | 579   | -      | 455   | 504   | -          | -     | -    | -      | -     | -    | -    |
|                          |        |       |        |       |       |            |       |      |        |       |      |      |
|                          |        |       |        |       |       |            |       |      |        |       |      |      |
| Approach                 | EB     |       | WB     |       |       | NB         |       |      | SB     |       |      |      |
| HCM Control Delay, s     | 22     |       | 34.2   |       |       | 0.3        |       |      | 0.2    |       |      |      |
| HCM LOS                  | C      |       | D      |       |       |            |       |      |        |       |      |      |
|                          |        |       |        |       |       |            |       |      |        |       |      |      |
| Minor Lane/Major Mvmt    | NBL    |       | NBT    | NBR   |       | EBLn1WBLn1 | SBL   | SBT  | SBR    |       |      |      |
| Capacity (veh/h)         | 1045   |       | -      | -     | 266   | 260        | 1172  | -    | -      |       |      |      |
| HCM Lane V/C Ratio       | 0.016  |       | -      | -     | 0.204 | 0.543      | 0.014 | -    | -      |       |      |      |
| HCM Control Delay (s)    | 8.5    |       | 0      | -     | 22    | 34.2       | 8.1   | 0    | -      |       |      |      |
| HCM Lane LOS             | A      |       | A      | -     | C     | D          | A     | A    | -      |       |      |      |
| HCM 95th %tile Q(veh)    | 0      |       | -      | -     | 0.7   | 3          | 0     | -    | -      |       |      |      |

| Intersection             |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|--------------------------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------|
| Int Delay, s/veh         | 0                                                                                 |        |       |                                                                                   |                                                                                   |       |
| Movement                 | EBT                                                                               | EBR    | WBL   | WBT                                                                               | NBL                                                                               | NBR   |
| Lane Configurations      |  |        |       |  |  |       |
| Traffic Vol, veh/h       | 70                                                                                | 0      | 0     | 130                                                                               | 0                                                                                 | 0     |
| Future Vol, veh/h        | 70                                                                                | 0      | 0     | 130                                                                               | 0                                                                                 | 0     |
| Conflicting Peds, #/hr   | 0                                                                                 | 0      | 0     | 0                                                                                 | 0                                                                                 | 0     |
| Sign Control             | Free                                                                              | Free   | Free  | Free                                                                              | Stop                                                                              | Stop  |
| RT Channelized           | -                                                                                 | None   | -     | None                                                                              | -                                                                                 | None  |
| Storage Length           | -                                                                                 | -      | -     | -                                                                                 | 0                                                                                 | -     |
| Veh in Median Storage, # | 0                                                                                 | -      | -     | 0                                                                                 | 0                                                                                 | -     |
| Grade, %                 | 0                                                                                 | -      | -     | 0                                                                                 | 0                                                                                 | -     |
| Peak Hour Factor         | 92                                                                                | 92     | 92    | 92                                                                                | 92                                                                                | 92    |
| Heavy Vehicles, %        | 2                                                                                 | 2      | 2     | 2                                                                                 | 2                                                                                 | 2     |
| Mvmt Flow                | 76                                                                                | 0      | 0     | 141                                                                               | 0                                                                                 | 0     |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Major/Minor              | Major1                                                                            | Major2 |       | Minor1                                                                            |                                                                                   |       |
| Conflicting Flow All     | 0                                                                                 | 0      | 76    | 0                                                                                 | 217                                                                               | 76    |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 76                                                                                | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 141                                                                               | -     |
| Critical Hdwy            | -                                                                                 | -      | 4.12  | -                                                                                 | 6.42                                                                              | 6.22  |
| Critical Hdwy Stg 1      | -                                                                                 | -      | -     | -                                                                                 | 5.42                                                                              | -     |
| Critical Hdwy Stg 2      | -                                                                                 | -      | -     | -                                                                                 | 5.42                                                                              | -     |
| Follow-up Hdwy           | -                                                                                 | -      | 2.218 | -                                                                                 | 3.518                                                                             | 3.318 |
| Pot Cap-1 Maneuver       | -                                                                                 | -      | 1523  | -                                                                                 | 771                                                                               | 985   |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 947                                                                               | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 886                                                                               | -     |
| Platoon blocked, %       | -                                                                                 | -      |       | -                                                                                 |                                                                                   |       |
| Mov Cap-1 Maneuver       | -                                                                                 | -      | 1523  | -                                                                                 | 771                                                                               | 985   |
| Mov Cap-2 Maneuver       | -                                                                                 | -      | -     | -                                                                                 | 771                                                                               | -     |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 947                                                                               | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 886                                                                               | -     |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Approach                 | EB                                                                                | WB     |       | NB                                                                                |                                                                                   |       |
| HCM Control Delay, s     | 0                                                                                 | 0      |       | 0                                                                                 |                                                                                   |       |
| HCM LOS                  | A                                                                                 |        |       |                                                                                   |                                                                                   |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Minor Lane/Major Mvmt    | NBLn1                                                                             | EBT    | EBR   | WBL                                                                               | WBT                                                                               |       |
| Capacity (veh/h)         | -                                                                                 | -      | -     | 1523                                                                              | -                                                                                 |       |
| HCM Lane V/C Ratio       | -                                                                                 | -      | -     | -                                                                                 | -                                                                                 |       |
| HCM Control Delay (s)    | 0                                                                                 | -      | -     | 0                                                                                 | -                                                                                 |       |
| HCM Lane LOS             | A                                                                                 | -      | -     | A                                                                                 | -                                                                                 |       |
| HCM 95th %tile Q(veh)    | -                                                                                 | -      | -     | 0                                                                                 | -                                                                                 |       |



| Intersection             |        |              |      |        |              |      |        |              |       |        |              |       |
|--------------------------|--------|--------------|------|--------|--------------|------|--------|--------------|-------|--------|--------------|-------|
| Int Delay, s/veh         | 7.7    |              |      |        |              |      |        |              |       |        |              |       |
| Movement                 | EBL    | EBT          | EBR  | WBL    | WBT          | WBR  | NBL    | NBT          | NBR   | SBL    | SBT          | SBR   |
| Lane Configurations      |        | <div>↕</div> |      |        | <div>↕</div> |      |        | <div>↕</div> |       |        | <div>↕</div> |       |
| Traffic Vol, veh/h       | 10     | 45           | 10   | 65     | 105          | 20   | 5      | 60           | 25    | 15     | 120          | 20    |
| Future Vol, veh/h        | 10     | 45           | 10   | 65     | 105          | 20   | 5      | 60           | 25    | 15     | 120          | 20    |
| Conflicting Peds, #/hr   | 0      | 0            | 0    | 0      | 0            | 0    | 0      | 0            | 0     | 0      | 0            | 0     |
| Sign Control             | Free   | Free         | Free | Free   | Free         | Free | Stop   | Stop         | Stop  | Stop   | Stop         | Stop  |
| RT Channelized           | -      | -            | None | -      | -            | None | -      | -            | None  | -      | -            | None  |
| Storage Length           | -      | -            | -    | -      | -            | -    | -      | -            | -     | -      | -            | -     |
| Veh in Median Storage, # | -      | 0            | -    | -      | 0            | -    | -      | 0            | -     | -      | 0            | -     |
| Grade, %                 | -      | 0            | -    | -      | 0            | -    | -      | 0            | -     | -      | 0            | -     |
| Peak Hour Factor         | 92     | 92           | 92   | 92     | 92           | 92   | 92     | 92           | 92    | 92     | 92           | 92    |
| Heavy Vehicles, %        | 2      | 2            | 2    | 2      | 2            | 2    | 2      | 2            | 2     | 2      | 2            | 2     |
| Mvmt Flow                | 11     | 49           | 11   | 71     | 114          | 22   | 5      | 65           | 27    | 16     | 130          | 22    |
|                          |        |              |      |        |              |      |        |              |       |        |              |       |
| Major/Minor              | Major1 |              |      | Major2 |              |      | Minor1 |              |       | Minor2 |              |       |
| Conflicting Flow All     | 136    | 0            | 0    | 60     | 0            | 0    | 420    | 355          | 55    | 390    | 349          | 125   |
| Stage 1                  | -      | -            | -    | -      | -            | -    | 77     | 77           | -     | 267    | 267          | -     |
| Stage 2                  | -      | -            | -    | -      | -            | -    | 343    | 278          | -     | 123    | 82           | -     |
| Critical Hdwy            | 4.12   | -            | -    | 4.12   | -            | -    | 7.12   | 6.52         | 6.22  | 7.12   | 6.52         | 6.22  |
| Critical Hdwy Stg 1      | -      | -            | -    | -      | -            | -    | 6.12   | 5.52         | -     | 6.12   | 5.52         | -     |
| Critical Hdwy Stg 2      | -      | -            | -    | -      | -            | -    | 6.12   | 5.52         | -     | 6.12   | 5.52         | -     |
| Follow-up Hdwy           | 2.218  | -            | -    | 2.218  | -            | -    | 3.518  | 4.018        | 3.318 | 3.518  | 4.018        | 3.318 |
| Pot Cap-1 Maneuver       | 1448   | -            | -    | 1544   | -            | -    | 544    | 571          | 1012  | 569    | 575          | 926   |
| Stage 1                  | -      | -            | -    | -      | -            | -    | 932    | 831          | -     | 738    | 688          | -     |
| Stage 2                  | -      | -            | -    | -      | -            | -    | 672    | 680          | -     | 881    | 827          | -     |
| Platoon blocked, %       |        | -            | -    |        | -            | -    |        |              |       |        |              |       |
| Mov Cap-1 Maneuver       | 1448   | -            | -    | 1544   | -            | -    | 415    | 538          | 1012  | 481    | 542          | 926   |
| Mov Cap-2 Maneuver       | -      | -            | -    | -      | -            | -    | 415    | 538          | -     | 481    | 542          | -     |
| Stage 1                  | -      | -            | -    | -      | -            | -    | 925    | 824          | -     | 732    | 654          | -     |
| Stage 2                  | -      | -            | -    | -      | -            | -    | 499    | 646          | -     | 783    | 820          | -     |
|                          |        |              |      |        |              |      |        |              |       |        |              |       |
|                          |        |              |      |        |              |      |        |              |       |        |              |       |
| Approach                 | EB     |              |      | WB     |              |      | NB     |              |       | SB     |              |       |
| HCM Control Delay, s     | 1.2    |              |      | 2.5    |              |      | 12.1   |              |       | 14.1   |              |       |
| HCM LOS                  |        |              |      |        |              |      | B      |              |       | B      |              |       |
|                          |        |              |      |        |              |      |        |              |       |        |              |       |
| Minor Lane/Major Mvmt    | NBLn1  | EBL          | EBT  | EBR    | WBL          | WBT  | WBR    | SBLn1        |       |        |              |       |
| Capacity (veh/h)         | 607    | 1448         | -    | -      | 1544         | -    | -      | 565          |       |        |              |       |
| HCM Lane V/C Ratio       | 0.161  | 0.008        | -    | -      | 0.046        | -    | -      | 0.298        |       |        |              |       |
| HCM Control Delay (s)    | 12.1   | 7.5          | 0    | -      | 7.4          | 0    | -      | 14.1         |       |        |              |       |
| HCM Lane LOS             | B      | A            | A    | -      | A            | A    | -      | B            |       |        |              |       |
| HCM 95th %tile Q(veh)    | 0.6    | 0            | -    | -      | 0.1          | -    | -      | 1.2          |       |        |              |       |

| Intersection             |        |                                                                                   |        |       |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
|--------------------------|--------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|-------|--------|-----------------------------------------------------------------------------------|------|-------|-------------------------------------------------------------------------------------|------|
| Int Delay, s/veh         | 3.4    |                                                                                   |        |       |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
| Movement                 | EBL    | EBT                                                                               | EBR    | WBL   | WBT                                                                               | WBR   | NBL    | NBT                                                                               | NBR  | SBL   | SBT                                                                                 | SBR  |
| Lane Configurations      |        |  |        |       |  |       |        |  |      |       |  |      |
| Traffic Vol, veh/h       | 5      | 30                                                                                | 10     | 35    | 20                                                                                | 25    | 5      | 440                                                                               | 115  | 40    | 290                                                                                 | 5    |
| Future Vol, veh/h        | 5      | 30                                                                                | 10     | 35    | 20                                                                                | 25    | 5      | 440                                                                               | 115  | 40    | 290                                                                                 | 5    |
| Conflicting Peds, #/hr   | 0      | 0                                                                                 | 0      | 0     | 0                                                                                 | 0     | 0      | 0                                                                                 | 0    | 0     | 0                                                                                   | 0    |
| Sign Control             | Stop   | Stop                                                                              | Stop   | Stop  | Stop                                                                              | Stop  | Free   | Free                                                                              | Free | Free  | Free                                                                                | Free |
| RT Channelized           | -      | -                                                                                 | None   | -     | -                                                                                 | None  | -      | -                                                                                 | None | -     | -                                                                                   | None |
| Storage Length           | -      | -                                                                                 | -      | -     | -                                                                                 | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Veh in Median Storage, # | -      | 0                                                                                 | -      | -     | 0                                                                                 | -     | -      | 0                                                                                 | -    | -     | 0                                                                                   | -    |
| Grade, %                 | -      | 0                                                                                 | -      | -     | 0                                                                                 | -     | -      | 0                                                                                 | -    | -     | 0                                                                                   | -    |
| Peak Hour Factor         | 92     | 92                                                                                | 92     | 92    | 92                                                                                | 92    | 92     | 92                                                                                | 92   | 92    | 92                                                                                  | 92   |
| Heavy Vehicles, %        | 2      | 2                                                                                 | 2      | 2     | 2                                                                                 | 2     | 2      | 2                                                                                 | 2    | 2     | 2                                                                                   | 2    |
| Mvmt Flow                | 5      | 33                                                                                | 11     | 38    | 22                                                                                | 27    | 5      | 478                                                                               | 125  | 43    | 315                                                                                 | 5    |
|                          |        |                                                                                   |        |       |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
| Major/Minor              | Minor2 |                                                                                   | Minor1 |       | Major1                                                                            |       | Major2 |                                                                                   |      |       |                                                                                     |      |
| Conflicting Flow All     | 979    | 1017                                                                              | 318    | 977   | 957                                                                               | 541   | 320    | 0                                                                                 | 0    | 603   | 0                                                                                   | 0    |
| Stage 1                  | 404    | 404                                                                               | -      | 551   | 551                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Stage 2                  | 575    | 613                                                                               | -      | 426   | 406                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Critical Hdwy            | 7.12   | 6.52                                                                              | 6.22   | 7.12  | 6.52                                                                              | 6.22  | 4.12   | -                                                                                 | -    | 4.12  | -                                                                                   | -    |
| Critical Hdwy Stg 1      | 6.12   | 5.52                                                                              | -      | 6.12  | 5.52                                                                              | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Critical Hdwy Stg 2      | 6.12   | 5.52                                                                              | -      | 6.12  | 5.52                                                                              | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Follow-up Hdwy           | 3.518  | 4.018                                                                             | 3.318  | 3.518 | 4.018                                                                             | 3.318 | 2.218  | -                                                                                 | -    | 2.218 | -                                                                                   | -    |
| Pot Cap-1 Maneuver       | 229    | 238                                                                               | 723    | 230   | 258                                                                               | 541   | 1240   | -                                                                                 | -    | 975   | -                                                                                   | -    |
| Stage 1                  | 623    | 599                                                                               | -      | 519   | 515                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Stage 2                  | 503    | 483                                                                               | -      | 606   | 598                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Platoon blocked, %       |        |                                                                                   |        |       |                                                                                   |       |        | -                                                                                 | -    |       | -                                                                                   | -    |
| Mov Cap-1 Maneuver       | 194    | 224                                                                               | 723    | 192   | 243                                                                               | 541   | 1240   | -                                                                                 | -    | 975   | -                                                                                   | -    |
| Mov Cap-2 Maneuver       | 194    | 224                                                                               | -      | 192   | 243                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Stage 1                  | 619    | 567                                                                               | -      | 516   | 512                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Stage 2                  | 455    | 480                                                                               | -      | 532   | 566                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
|                          |        |                                                                                   |        |       |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
| Approach                 | EB     |                                                                                   | WB     |       | NB                                                                                |       | SB     |                                                                                   |      |       |                                                                                     |      |
| HCM Control Delay, s     | 22.1   |                                                                                   | 26     |       | 0.1                                                                               |       | 1.1    |                                                                                   |      |       |                                                                                     |      |
| HCM LOS                  | C      |                                                                                   | D      |       |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
|                          |        |                                                                                   |        |       |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
| Minor Lane/Major Mvmt    | NBL    | NBT                                                                               | NBR    | EBLn1 | WBLn1                                                                             | SBL   | SBT    | SBR                                                                               |      |       |                                                                                     |      |
| Capacity (veh/h)         | 1240   | -                                                                                 | -      | 259   | 257                                                                               | 975   | -      | -                                                                                 |      |       |                                                                                     |      |
| HCM Lane V/C Ratio       | 0.004  | -                                                                                 | -      | 0.189 | 0.338                                                                             | 0.045 | -      | -                                                                                 |      |       |                                                                                     |      |
| HCM Control Delay (s)    | 7.9    | 0                                                                                 | -      | 22.1  | 26                                                                                | 8.9   | 0      | -                                                                                 |      |       |                                                                                     |      |
| HCM Lane LOS             | A      | A                                                                                 | -      | C     | D                                                                                 | A     | A      | -                                                                                 |      |       |                                                                                     |      |
| HCM 95th %tile Q(veh)    | 0      | -                                                                                 | -      | 0.7   | 1.4                                                                               | 0.1   | -      | -                                                                                 |      |       |                                                                                     |      |

| Intersection             |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|--------------------------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------|
| Int Delay, s/veh         | 0                                                                                 |        |       |                                                                                   |                                                                                   |       |
| Movement                 | EBT                                                                               | EBR    | WBL   | WBT                                                                               | NBL                                                                               | NBR   |
| Lane Configurations      |  |        |       |  |  |       |
| Traffic Vol, veh/h       | 185                                                                               | 0      | 0     | 85                                                                                | 0                                                                                 | 0     |
| Future Vol, veh/h        | 185                                                                               | 0      | 0     | 85                                                                                | 0                                                                                 | 0     |
| Conflicting Peds, #/hr   | 0                                                                                 | 0      | 0     | 0                                                                                 | 0                                                                                 | 0     |
| Sign Control             | Free                                                                              | Free   | Free  | Free                                                                              | Stop                                                                              | Stop  |
| RT Channelized           | -                                                                                 | None   | -     | None                                                                              | -                                                                                 | None  |
| Storage Length           | -                                                                                 | -      | -     | -                                                                                 | 0                                                                                 | -     |
| Veh in Median Storage, # | 0                                                                                 | -      | -     | 0                                                                                 | 0                                                                                 | -     |
| Grade, %                 | 0                                                                                 | -      | -     | 0                                                                                 | 0                                                                                 | -     |
| Peak Hour Factor         | 92                                                                                | 92     | 92    | 92                                                                                | 92                                                                                | 92    |
| Heavy Vehicles, %        | 2                                                                                 | 2      | 2     | 2                                                                                 | 2                                                                                 | 2     |
| Mvmt Flow                | 201                                                                               | 0      | 0     | 92                                                                                | 0                                                                                 | 0     |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Major/Minor              | Major1                                                                            | Major2 |       | Minor1                                                                            |                                                                                   |       |
| Conflicting Flow All     | 0                                                                                 | 0      | 201   | 0                                                                                 | 293                                                                               | 201   |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 201                                                                               | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 92                                                                                | -     |
| Critical Hdwy            | -                                                                                 | -      | 4.12  | -                                                                                 | 6.42                                                                              | 6.22  |
| Critical Hdwy Stg 1      | -                                                                                 | -      | -     | -                                                                                 | 5.42                                                                              | -     |
| Critical Hdwy Stg 2      | -                                                                                 | -      | -     | -                                                                                 | 5.42                                                                              | -     |
| Follow-up Hdwy           | -                                                                                 | -      | 2.218 | -                                                                                 | 3.518                                                                             | 3.318 |
| Pot Cap-1 Maneuver       | -                                                                                 | -      | 1371  | -                                                                                 | 698                                                                               | 840   |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 833                                                                               | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 932                                                                               | -     |
| Platoon blocked, %       | -                                                                                 | -      |       | -                                                                                 |                                                                                   |       |
| Mov Cap-1 Maneuver       | -                                                                                 | -      | 1371  | -                                                                                 | 698                                                                               | 840   |
| Mov Cap-2 Maneuver       | -                                                                                 | -      | -     | -                                                                                 | 698                                                                               | -     |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 833                                                                               | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 932                                                                               | -     |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Approach                 | EB                                                                                | WB     |       | NB                                                                                |                                                                                   |       |
| HCM Control Delay, s     | 0                                                                                 | 0      |       | 0                                                                                 |                                                                                   |       |
| HCM LOS                  |                                                                                   |        |       |                                                                                   | A                                                                                 |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Minor Lane/Major Mvmt    | NBLn1                                                                             | EBT    | EBR   | WBL                                                                               | WBT                                                                               |       |
| Capacity (veh/h)         | -                                                                                 | -      | -     | 1371                                                                              | -                                                                                 |       |
| HCM Lane V/C Ratio       | -                                                                                 | -      | -     | -                                                                                 | -                                                                                 |       |
| HCM Control Delay (s)    | 0                                                                                 | -      | -     | 0                                                                                 | -                                                                                 |       |
| HCM Lane LOS             | A                                                                                 | -      | -     | A                                                                                 | -                                                                                 |       |
| HCM 95th %tile Q(veh)    | -                                                                                 | -      | -     | 0                                                                                 | -                                                                                 |       |

| Intersection             |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
|--------------------------|--------|-----------------------------------------------------------------------------------|------|--------|-----------------------------------------------------------------------------------|------|--------|-----------------------------------------------------------------------------------|-------|--------|-------------------------------------------------------------------------------------|-------|
| Int Delay, s/veh         | 6.3    |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
| Movement                 | EBL    | EBT                                                                               | EBR  | WBL    | WBT                                                                               | WBR  | NBL    | NBT                                                                               | NBR   | SBL    | SBT                                                                                 | SBR   |
| Lane Configurations      |        |  |      |        |  |      |        |  |       |        |  |       |
| Traffic Vol, veh/h       | 25     | 150                                                                               | 10   | 20     | 60                                                                                | 5    | 5      | 85                                                                                | 50    | 15     | 55                                                                                  | 20    |
| Future Vol, veh/h        | 25     | 150                                                                               | 10   | 20     | 60                                                                                | 5    | 5      | 85                                                                                | 50    | 15     | 55                                                                                  | 20    |
| Conflicting Peds, #/hr   | 0      | 0                                                                                 | 0    | 0      | 0                                                                                 | 0    | 0      | 0                                                                                 | 0     | 0      | 0                                                                                   | 0     |
| Sign Control             | Free   | Free                                                                              | Free | Free   | Free                                                                              | Free | Stop   | Stop                                                                              | Stop  | Stop   | Stop                                                                                | Stop  |
| RT Channelized           | -      | -                                                                                 | None | -      | -                                                                                 | None | -      | -                                                                                 | None  | -      | -                                                                                   | None  |
| Storage Length           | -      | -                                                                                 | -    | -      | -                                                                                 | -    | -      | -                                                                                 | -     | -      | -                                                                                   | -     |
| Veh in Median Storage, # | -      | 0                                                                                 | -    | -      | 0                                                                                 | -    | -      | 0                                                                                 | -     | -      | 0                                                                                   | -     |
| Grade, %                 | -      | 0                                                                                 | -    | -      | 0                                                                                 | -    | -      | 0                                                                                 | -     | -      | 0                                                                                   | -     |
| Peak Hour Factor         | 92     | 92                                                                                | 92   | 92     | 92                                                                                | 92   | 92     | 92                                                                                | 92    | 92     | 92                                                                                  | 92    |
| Heavy Vehicles, %        | 2      | 2                                                                                 | 2    | 2      | 2                                                                                 | 2    | 2      | 2                                                                                 | 2     | 2      | 2                                                                                   | 2     |
| Mvmt Flow                | 27     | 163                                                                               | 11   | 22     | 65                                                                                | 5    | 5      | 92                                                                                | 54    | 16     | 60                                                                                  | 22    |
|                          |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
| Major/Minor              | Major1 |                                                                                   |      | Major2 |                                                                                   |      | Minor1 |                                                                                   |       | Minor2 |                                                                                     |       |
| Conflicting Flow All     | 70     | 0                                                                                 | 0    | 174    | 0                                                                                 | 0    | 376    | 337                                                                               | 169   | 408    | 340                                                                                 | 68    |
| Stage 1                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 223    | 223                                                                               | -     | 112    | 112                                                                                 | -     |
| Stage 2                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 153    | 114                                                                               | -     | 296    | 228                                                                                 | -     |
| Critical Hdwy            | 4.12   | -                                                                                 | -    | 4.12   | -                                                                                 | -    | 7.12   | 6.52                                                                              | 6.22  | 7.12   | 6.52                                                                                | 6.22  |
| Critical Hdwy Stg 1      | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 6.12   | 5.52                                                                              | -     | 6.12   | 5.52                                                                                | -     |
| Critical Hdwy Stg 2      | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 6.12   | 5.52                                                                              | -     | 6.12   | 5.52                                                                                | -     |
| Follow-up Hdwy           | 2.218  | -                                                                                 | -    | 2.218  | -                                                                                 | -    | 3.518  | 4.018                                                                             | 3.318 | 3.518  | 4.018                                                                               | 3.318 |
| Pot Cap-1 Maneuver       | 1531   | -                                                                                 | -    | 1403   | -                                                                                 | -    | 581    | 584                                                                               | 875   | 554    | 582                                                                                 | 995   |
| Stage 1                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 780    | 719                                                                               | -     | 893    | 803                                                                                 | -     |
| Stage 2                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 849    | 801                                                                               | -     | 712    | 715                                                                                 | -     |
| Platoon blocked, %       |        | -                                                                                 | -    |        | -                                                                                 | -    |        |                                                                                   |       |        |                                                                                     |       |
| Mov Cap-1 Maneuver       | 1531   | -                                                                                 | -    | 1403   | -                                                                                 | -    | 508    | 563                                                                               | 875   | 442    | 561                                                                                 | 995   |
| Mov Cap-2 Maneuver       | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 508    | 563                                                                               | -     | 442    | 561                                                                                 | -     |
| Stage 1                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 764    | 705                                                                               | -     | 875    | 790                                                                                 | -     |
| Stage 2                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 755    | 788                                                                               | -     | 569    | 701                                                                                 | -     |
|                          |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
|                          |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
| Approach                 | EB     |                                                                                   | WB   |        |                                                                                   |      | NB     |                                                                                   | SB    |        |                                                                                     |       |
| HCM Control Delay, s     | 1      |                                                                                   | 1.8  |        |                                                                                   |      | 12.3   |                                                                                   | 12.3  |        |                                                                                     |       |
| HCM LOS                  |        |                                                                                   |      |        |                                                                                   |      | B      |                                                                                   | B     |        |                                                                                     |       |
|                          |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
| Minor Lane/Major Mvmt    | NBLn1  | EBL                                                                               | EBT  | EBR    | WBL                                                                               | WBT  | WBR    | SBLn1                                                                             |       |        |                                                                                     |       |
| Capacity (veh/h)         | 642    | 1531                                                                              | -    | -      | 1403                                                                              | -    | -      | 592                                                                               |       |        |                                                                                     |       |
| HCM Lane V/C Ratio       | 0.237  | 0.018                                                                             | -    | -      | 0.015                                                                             | -    | -      | 0.165                                                                             |       |        |                                                                                     |       |
| HCM Control Delay (s)    | 12.3   | 7.4                                                                               | 0    | -      | 7.6                                                                               | 0    | -      | 12.3                                                                              |       |        |                                                                                     |       |
| HCM Lane LOS             | B      | A                                                                                 | A    | -      | A                                                                                 | A    | -      | B                                                                                 |       |        |                                                                                     |       |
| HCM 95th %tile O(veh)    | 0.9    | 0.1                                                                               | -    | -      | 0                                                                                 | -    | -      | 0.6                                                                               |       |        |                                                                                     |       |

| Intersection             |        |       |        |       |        |       |        |      |      |       |      |      |
|--------------------------|--------|-------|--------|-------|--------|-------|--------|------|------|-------|------|------|
| Int Delay, s/veh         | 5.5    |       |        |       |        |       |        |      |      |       |      |      |
| Movement                 | EBL    | EBT   | EBR    | WBL   | WBT    | WBR   | NBL    | NBT  | NBR  | SBL   | SBT  | SBR  |
| Lane Configurations      |        | ↕     |        |       | ↕      |       |        | ↕    |      |       | ↕    |      |
| Traffic Vol, veh/h       | 10     | 25    | 15     | 50    | 50     | 30    | 15     | 330  | 25   | 15    | 480  | 5    |
| Future Vol, veh/h        | 10     | 25    | 15     | 50    | 50     | 30    | 15     | 330  | 25   | 15    | 480  | 5    |
| Conflicting Peds, #/hr   | 0      | 0     | 0      | 0     | 0      | 0     | 0      | 0    | 0    | 0     | 0    | 0    |
| Sign Control             | Stop   | Stop  | Stop   | Stop  | Stop   | Stop  | Free   | Free | Free | Free  | Free | Free |
| RT Channelized           | -      | -     | None   | -     | -      | None  | -      | -    | None | -     | -    | None |
| Storage Length           | -      | -     | -      | -     | -      | -     | -      | -    | -    | -     | -    | -    |
| Veh in Median Storage, # | -      | 0     | -      | -     | 0      | -     | -      | 0    | -    | -     | 0    | -    |
| Grade, %                 | -      | 0     | -      | -     | 0      | -     | -      | 0    | -    | -     | 0    | -    |
| Peak Hour Factor         | 92     | 92    | 92     | 92    | 92     | 92    | 92     | 92   | 92   | 92    | 92   | 92   |
| Heavy Vehicles, %        | 2      | 2     | 2      | 2     | 2      | 2     | 2      | 2    | 2    | 2     | 2    | 2    |
| Mvmt Flow                | 11     | 27    | 16     | 54    | 54     | 33    | 16     | 359  | 27   | 16    | 522  | 5    |
|                          |        |       |        |       |        |       |        |      |      |       |      |      |
| Major/Minor              | Minor2 |       | Minor1 |       | Major1 |       | Major2 |      |      |       |      |      |
| Conflicting Flow All     | 1005   | 975   | 525    | 983   | 964    | 373   | 527    | 0    | 0    | 386   | 0    | 0    |
| Stage 1                  | 557    | 557   | -      | 405   | 405    | -     | -      | -    | -    | -     | -    | -    |
| Stage 2                  | 448    | 418   | -      | 578   | 559    | -     | -      | -    | -    | -     | -    | -    |
| Critical Hdwy            | 7.12   | 6.52  | 6.22   | 7.12  | 6.52   | 6.22  | 4.12   | -    | -    | 4.12  | -    | -    |
| Critical Hdwy Stg 1      | 6.12   | 5.52  | -      | 6.12  | 5.52   | -     | -      | -    | -    | -     | -    | -    |
| Critical Hdwy Stg 2      | 6.12   | 5.52  | -      | 6.12  | 5.52   | -     | -      | -    | -    | -     | -    | -    |
| Follow-up Hdwy           | 3.518  | 4.018 | 3.318  | 3.518 | 4.018  | 3.318 | 2.218  | -    | -    | 2.218 | -    | -    |
| Pot Cap-1 Maneuver       | 220    | 251   | 552    | 228   | 255    | 673   | 1040   | -    | -    | 1172  | -    | -    |
| Stage 1                  | 515    | 512   | -      | 622   | 598    | -     | -      | -    | -    | -     | -    | -    |
| Stage 2                  | 590    | 591   | -      | 501   | 511    | -     | -      | -    | -    | -     | -    | -    |
| Platoon blocked, %       |        |       |        |       |        |       |        | -    | -    |       | -    | -    |
| Mov Cap-1 Maneuver       | 169    | 241   | 552    | 196   | 245    | 673   | 1040   | -    | -    | 1172  | -    | -    |
| Mov Cap-2 Maneuver       | 169    | 241   | -      | 196   | 245    | -     | -      | -    | -    | -     | -    | -    |
| Stage 1                  | 505    | 502   | -      | 610   | 586    | -     | -      | -    | -    | -     | -    | -    |
| Stage 2                  | 499    | 579   | -      | 451   | 501    | -     | -      | -    | -    | -     | -    | -    |
|                          |        |       |        |       |        |       |        |      |      |       |      |      |
|                          |        |       |        |       |        |       |        |      |      |       |      |      |
| Approach                 | EB     |       | WB     |       | NB     |       | SB     |      |      |       |      |      |
| HCM Control Delay, s     | 22.2   |       | 34.6   |       | 0.3    |       | 0.2    |      |      |       |      |      |
| HCM LOS                  | C      |       | D      |       |        |       |        |      |      |       |      |      |
|                          |        |       |        |       |        |       |        |      |      |       |      |      |
| Minor Lane/Major Mvmt    | NBL    | NBT   | NBR    | EBLn1 | WBLn1  | SBL   | SBT    | SBR  |      |       |      |      |
| Capacity (veh/h)         | 1040   | -     | -      | 263   | 258    | 1172  | -      | -    |      |       |      |      |
| HCM Lane V/C Ratio       | 0.016  | -     | -      | 0.207 | 0.548  | 0.014 | -      | -    |      |       |      |      |
| HCM Control Delay (s)    | 8.5    | 0     | -      | 22.2  | 34.6   | 8.1   | 0      | -    |      |       |      |      |
| HCM Lane LOS             | A      | A     | -      | C     | D      | A     | A      | -    |      |       |      |      |
| HCM 95th %tile Q(veh)    | 0      | -     | -      | 0.8   | 3      | 0     | -      | -    |      |       |      |      |

| Intersection             |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|--------------------------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------|
| Int Delay, s/veh         | 0                                                                                 |        |       |                                                                                   |                                                                                   |       |
| Movement                 | EBT                                                                               | EBR    | WBL   | WBT                                                                               | NBL                                                                               | NBR   |
| Lane Configurations      |  |        |       |  |  |       |
| Traffic Vol, veh/h       | 70                                                                                | 0      | 0     | 135                                                                               | 0                                                                                 | 0     |
| Future Vol, veh/h        | 70                                                                                | 0      | 0     | 135                                                                               | 0                                                                                 | 0     |
| Conflicting Peds, #/hr   | 0                                                                                 | 0      | 0     | 0                                                                                 | 0                                                                                 | 0     |
| Sign Control             | Free                                                                              | Free   | Free  | Free                                                                              | Stop                                                                              | Stop  |
| RT Channelized           | -                                                                                 | None   | -     | None                                                                              | -                                                                                 | None  |
| Storage Length           | -                                                                                 | -      | -     | -                                                                                 | 0                                                                                 | -     |
| Veh in Median Storage, # | 0                                                                                 | -      | -     | 0                                                                                 | 0                                                                                 | -     |
| Grade, %                 | 0                                                                                 | -      | -     | 0                                                                                 | 0                                                                                 | -     |
| Peak Hour Factor         | 92                                                                                | 92     | 92    | 92                                                                                | 92                                                                                | 92    |
| Heavy Vehicles, %        | 2                                                                                 | 2      | 2     | 2                                                                                 | 2                                                                                 | 2     |
| Mvmt Flow                | 76                                                                                | 0      | 0     | 147                                                                               | 0                                                                                 | 0     |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Major/Minor              | Major1                                                                            | Major2 |       | Minor1                                                                            |                                                                                   |       |
| Conflicting Flow All     | 0                                                                                 | 0      | 76    | 0                                                                                 | 223                                                                               | 76    |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 76                                                                                | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 147                                                                               | -     |
| Critical Hdwy            | -                                                                                 | -      | 4.12  | -                                                                                 | 6.42                                                                              | 6.22  |
| Critical Hdwy Stg 1      | -                                                                                 | -      | -     | -                                                                                 | 5.42                                                                              | -     |
| Critical Hdwy Stg 2      | -                                                                                 | -      | -     | -                                                                                 | 5.42                                                                              | -     |
| Follow-up Hdwy           | -                                                                                 | -      | 2.218 | -                                                                                 | 3.518                                                                             | 3.318 |
| Pot Cap-1 Maneuver       | -                                                                                 | -      | 1523  | -                                                                                 | 765                                                                               | 985   |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 947                                                                               | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 880                                                                               | -     |
| Platoon blocked, %       | -                                                                                 | -      |       | -                                                                                 |                                                                                   |       |
| Mov Cap-1 Maneuver       | -                                                                                 | -      | 1523  | -                                                                                 | 765                                                                               | 985   |
| Mov Cap-2 Maneuver       | -                                                                                 | -      | -     | -                                                                                 | 765                                                                               | -     |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 947                                                                               | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 880                                                                               | -     |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Approach                 | EB                                                                                | WB     |       | NB                                                                                |                                                                                   |       |
| HCM Control Delay, s     | 0                                                                                 | 0      |       | 0                                                                                 |                                                                                   |       |
| HCM LOS                  | A                                                                                 |        |       |                                                                                   |                                                                                   |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Minor Lane/Major Mvmt    | NBLn1                                                                             | EBT    | EBR   | WBL                                                                               | WBT                                                                               |       |
| Capacity (veh/h)         | -                                                                                 | -      | -     | 1523                                                                              | -                                                                                 |       |
| HCM Lane V/C Ratio       | -                                                                                 | -      | -     | -                                                                                 | -                                                                                 |       |
| HCM Control Delay (s)    | 0                                                                                 | -      | -     | 0                                                                                 | -                                                                                 |       |
| HCM Lane LOS             | A                                                                                 | -      | -     | A                                                                                 | -                                                                                 |       |
| HCM 95th %tile Q(veh)    | -                                                                                 | -      | -     | 0                                                                                 | -                                                                                 |       |

| Intersection             |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
|--------------------------|--------|-----------------------------------------------------------------------------------|------|--------|-----------------------------------------------------------------------------------|------|--------|-----------------------------------------------------------------------------------|-------|--------|-------------------------------------------------------------------------------------|-------|
| Int Delay, s/veh         | 7.7    |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
| Movement                 | EBL    | EBT                                                                               | EBR  | WBL    | WBT                                                                               | WBR  | NBL    | NBT                                                                               | NBR   | SBL    | SBT                                                                                 | SBR   |
| Lane Configurations      |        |  |      |        |  |      |        |  |       |        |  |       |
| Traffic Vol, veh/h       | 10     | 45                                                                                | 10   | 65     | 105                                                                               | 20   | 5      | 65                                                                                | 25    | 15     | 120                                                                                 | 20    |
| Future Vol, veh/h        | 10     | 45                                                                                | 10   | 65     | 105                                                                               | 20   | 5      | 65                                                                                | 25    | 15     | 120                                                                                 | 20    |
| Conflicting Peds, #/hr   | 0      | 0                                                                                 | 0    | 0      | 0                                                                                 | 0    | 0      | 0                                                                                 | 0     | 0      | 0                                                                                   | 0     |
| Sign Control             | Free   | Free                                                                              | Free | Free   | Free                                                                              | Free | Stop   | Stop                                                                              | Stop  | Stop   | Stop                                                                                | Stop  |
| RT Channelized           | -      | -                                                                                 | None | -      | -                                                                                 | None | -      | -                                                                                 | None  | -      | -                                                                                   | None  |
| Storage Length           | -      | -                                                                                 | -    | -      | -                                                                                 | -    | -      | -                                                                                 | -     | -      | -                                                                                   | -     |
| Veh in Median Storage, # | -      | 0                                                                                 | -    | -      | 0                                                                                 | -    | -      | 0                                                                                 | -     | -      | 0                                                                                   | -     |
| Grade, %                 | -      | 0                                                                                 | -    | -      | 0                                                                                 | -    | -      | 0                                                                                 | -     | -      | 0                                                                                   | -     |
| Peak Hour Factor         | 92     | 92                                                                                | 92   | 92     | 92                                                                                | 92   | 92     | 92                                                                                | 92    | 92     | 92                                                                                  | 92    |
| Heavy Vehicles, %        | 2      | 2                                                                                 | 2    | 2      | 2                                                                                 | 2    | 2      | 2                                                                                 | 2     | 2      | 2                                                                                   | 2     |
| Mvmt Flow                | 11     | 49                                                                                | 11   | 71     | 114                                                                               | 22   | 5      | 71                                                                                | 27    | 16     | 130                                                                                 | 22    |
|                          |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
| Major/Minor              | Major1 |                                                                                   |      | Major2 |                                                                                   |      | Minor1 |                                                                                   |       | Minor2 |                                                                                     |       |
| Conflicting Flow All     | 136    | 0                                                                                 | 0    | 60     | 0                                                                                 | 0    | 420    | 355                                                                               | 55    | 393    | 349                                                                                 | 125   |
| Stage 1                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 77     | 77                                                                                | -     | 267    | 267                                                                                 | -     |
| Stage 2                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 343    | 278                                                                               | -     | 126    | 82                                                                                  | -     |
| Critical Hdwy            | 4.12   | -                                                                                 | -    | 4.12   | -                                                                                 | -    | 7.12   | 6.52                                                                              | 6.22  | 7.12   | 6.52                                                                                | 6.22  |
| Critical Hdwy Stg 1      | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 6.12   | 5.52                                                                              | -     | 6.12   | 5.52                                                                                | -     |
| Critical Hdwy Stg 2      | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 6.12   | 5.52                                                                              | -     | 6.12   | 5.52                                                                                | -     |
| Follow-up Hdwy           | 2.218  | -                                                                                 | -    | 2.218  | -                                                                                 | -    | 3.518  | 4.018                                                                             | 3.318 | 3.518  | 4.018                                                                               | 3.318 |
| Pot Cap-1 Maneuver       | 1448   | -                                                                                 | -    | 1544   | -                                                                                 | -    | 544    | 571                                                                               | 1012  | 566    | 575                                                                                 | 926   |
| Stage 1                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 932    | 831                                                                               | -     | 738    | 688                                                                                 | -     |
| Stage 2                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 672    | 680                                                                               | -     | 878    | 827                                                                                 | -     |
| Platoon blocked, %       |        | -                                                                                 | -    |        | -                                                                                 | -    |        |                                                                                   |       |        |                                                                                     |       |
| Mov Cap-1 Maneuver       | 1448   | -                                                                                 | -    | 1544   | -                                                                                 | -    | 415    | 538                                                                               | 1012  | 474    | 542                                                                                 | 926   |
| Mov Cap-2 Maneuver       | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 415    | 538                                                                               | -     | 474    | 542                                                                                 | -     |
| Stage 1                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 925    | 824                                                                               | -     | 732    | 654                                                                                 | -     |
| Stage 2                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 499    | 646                                                                               | -     | 775    | 820                                                                                 | -     |
|                          |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
| Approach                 | EB     |                                                                                   |      | WB     |                                                                                   |      | NB     |                                                                                   |       | SB     |                                                                                     |       |
| HCM Control Delay, s     | 1.2    |                                                                                   |      | 2.5    |                                                                                   |      | 12.2   |                                                                                   |       | 14.1   |                                                                                     |       |
| HCM LOS                  |        |                                                                                   |      |        |                                                                                   |      | B      |                                                                                   |       | B      |                                                                                     |       |
|                          |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
| Minor Lane/Major Mvmt    | NBLn1  | EBL                                                                               | EBT  | EBR    | WBL                                                                               | WBT  | WBR    | SBLn1                                                                             |       |        |                                                                                     |       |
| Capacity (veh/h)         | 603    | 1448                                                                              | -    | -      | 1544                                                                              | -    | -      | 564                                                                               |       |        |                                                                                     |       |
| HCM Lane V/C Ratio       | 0.171  | 0.008                                                                             | -    | -      | 0.046                                                                             | -    | -      | 0.299                                                                             |       |        |                                                                                     |       |
| HCM Control Delay (s)    | 12.2   | 7.5                                                                               | 0    | -      | 7.4                                                                               | 0    | -      | 14.1                                                                              |       |        |                                                                                     |       |
| HCM Lane LOS             | B      | A                                                                                 | A    | -      | A                                                                                 | A    | -      | B                                                                                 |       |        |                                                                                     |       |
| HCM 95th %tile Q(veh)    | 0.6    | 0                                                                                 | -    | -      | 0.1                                                                               | -    | -      | 1.2                                                                               |       |        |                                                                                     |       |

| Intersection             |        |                                                                                   |        |       |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
|--------------------------|--------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|-------|--------|-----------------------------------------------------------------------------------|------|-------|-------------------------------------------------------------------------------------|------|
| Int Delay, s/veh         | 3.4    |                                                                                   |        |       |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
| Movement                 | EBL    | EBT                                                                               | EBR    | WBL   | WBT                                                                               | WBR   | NBL    | NBT                                                                               | NBR  | SBL   | SBT                                                                                 | SBR  |
| Lane Configurations      |        |  |        |       |  |       |        |  |      |       |  |      |
| Traffic Vol, veh/h       | 5      | 30                                                                                | 10     | 35    | 20                                                                                | 25    | 5      | 450                                                                               | 115  | 40    | 295                                                                                 | 5    |
| Future Vol, veh/h        | 5      | 30                                                                                | 10     | 35    | 20                                                                                | 25    | 5      | 450                                                                               | 115  | 40    | 295                                                                                 | 5    |
| Conflicting Peds, #/hr   | 0      | 0                                                                                 | 0      | 0     | 0                                                                                 | 0     | 0      | 0                                                                                 | 0    | 0     | 0                                                                                   | 0    |
| Sign Control             | Stop   | Stop                                                                              | Stop   | Stop  | Stop                                                                              | Stop  | Free   | Free                                                                              | Free | Free  | Free                                                                                | Free |
| RT Channelized           | -      | -                                                                                 | None   | -     | -                                                                                 | None  | -      | -                                                                                 | None | -     | -                                                                                   | None |
| Storage Length           | -      | -                                                                                 | -      | -     | -                                                                                 | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Veh in Median Storage, # | -      | 0                                                                                 | -      | -     | 0                                                                                 | -     | -      | 0                                                                                 | -    | -     | 0                                                                                   | -    |
| Grade, %                 | -      | 0                                                                                 | -      | -     | 0                                                                                 | -     | -      | 0                                                                                 | -    | -     | 0                                                                                   | -    |
| Peak Hour Factor         | 92     | 92                                                                                | 92     | 92    | 92                                                                                | 92    | 92     | 92                                                                                | 92   | 92    | 92                                                                                  | 92   |
| Heavy Vehicles, %        | 2      | 2                                                                                 | 2      | 2     | 2                                                                                 | 2     | 2      | 2                                                                                 | 2    | 2     | 2                                                                                   | 2    |
| Mvmt Flow                | 5      | 33                                                                                | 11     | 38    | 22                                                                                | 27    | 5      | 489                                                                               | 125  | 43    | 321                                                                                 | 5    |
|                          |        |                                                                                   |        |       |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
| Major/Minor              | Minor2 |                                                                                   | Minor1 |       | Major1                                                                            |       | Major2 |                                                                                   |      |       |                                                                                     |      |
| Conflicting Flow All     | 996    | 1034                                                                              | 324    | 994   | 974                                                                               | 552   | 326    | 0                                                                                 | 0    | 614   | 0                                                                                   | 0    |
| Stage 1                  | 410    | 410                                                                               | -      | 562   | 562                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Stage 2                  | 586    | 624                                                                               | -      | 432   | 412                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Critical Hdwy            | 7.12   | 6.52                                                                              | 6.22   | 7.12  | 6.52                                                                              | 6.22  | 4.12   | -                                                                                 | -    | 4.12  | -                                                                                   | -    |
| Critical Hdwy Stg 1      | 6.12   | 5.52                                                                              | -      | 6.12  | 5.52                                                                              | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Critical Hdwy Stg 2      | 6.12   | 5.52                                                                              | -      | 6.12  | 5.52                                                                              | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Follow-up Hdwy           | 3.518  | 4.018                                                                             | 3.318  | 3.518 | 4.018                                                                             | 3.318 | 2.218  | -                                                                                 | -    | 2.218 | -                                                                                   | -    |
| Pot Cap-1 Maneuver       | 223    | 232                                                                               | 717    | 224   | 252                                                                               | 533   | 1234   | -                                                                                 | -    | 965   | -                                                                                   | -    |
| Stage 1                  | 619    | 595                                                                               | -      | 512   | 510                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Stage 2                  | 496    | 478                                                                               | -      | 602   | 594                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Platoon blocked, %       |        |                                                                                   |        |       |                                                                                   |       |        | -                                                                                 | -    |       | -                                                                                   | -    |
| Mov Cap-1 Maneuver       | 188    | 218                                                                               | 717    | 187   | 237                                                                               | 533   | 1234   | -                                                                                 | -    | 965   | -                                                                                   | -    |
| Mov Cap-2 Maneuver       | 188    | 218                                                                               | -      | 187   | 237                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Stage 1                  | 615    | 563                                                                               | -      | 509   | 507                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Stage 2                  | 448    | 475                                                                               | -      | 528   | 562                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
|                          |        |                                                                                   |        |       |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
|                          |        |                                                                                   |        |       |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
| Approach                 | EB     |                                                                                   | WB     |       | NB                                                                                |       | SB     |                                                                                   |      |       |                                                                                     |      |
| HCM Control Delay, s     | 22.6   |                                                                                   | 26.8   |       | 0.1                                                                               |       | 1      |                                                                                   |      |       |                                                                                     |      |
| HCM LOS                  | C      |                                                                                   | D      |       |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
|                          |        |                                                                                   |        |       |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
| Minor Lane/Major Mvmt    | NBL    | NBT                                                                               | NBR    | EBLn1 | WBLn1                                                                             | SBL   | SBT    | SBR                                                                               |      |       |                                                                                     |      |
| Capacity (veh/h)         | 1234   | -                                                                                 | -      | 253   | 251                                                                               | 965   | -      | -                                                                                 |      |       |                                                                                     |      |
| HCM Lane V/C Ratio       | 0.004  | -                                                                                 | -      | 0.193 | 0.346                                                                             | 0.045 | -      | -                                                                                 |      |       |                                                                                     |      |
| HCM Control Delay (s)    | 7.9    | 0                                                                                 | -      | 22.6  | 26.8                                                                              | 8.9   | 0      | -                                                                                 |      |       |                                                                                     |      |
| HCM Lane LOS             | A      | A                                                                                 | -      | C     | D                                                                                 | A     | A      | -                                                                                 |      |       |                                                                                     |      |
| HCM 95th %tile Q(veh)    | 0      | -                                                                                 | -      | 0.7   | 1.5                                                                               | 0.1   | -      | -                                                                                 |      |       |                                                                                     |      |



| Intersection             |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|--------------------------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------|
| Int Delay, s/veh         | 0                                                                                 |        |       |                                                                                   |                                                                                   |       |
| Movement                 | EBT                                                                               | EBR    | WBL   | WBT                                                                               | NBL                                                                               | NBR   |
| Lane Configurations      |  |        |       |  |  |       |
| Traffic Vol, veh/h       | 185                                                                               | 0      | 0     | 85                                                                                | 0                                                                                 | 0     |
| Future Vol, veh/h        | 185                                                                               | 0      | 0     | 85                                                                                | 0                                                                                 | 0     |
| Conflicting Peds, #/hr   | 0                                                                                 | 0      | 0     | 0                                                                                 | 0                                                                                 | 0     |
| Sign Control             | Free                                                                              | Free   | Free  | Free                                                                              | Stop                                                                              | Stop  |
| RT Channelized           | -                                                                                 | None   | -     | None                                                                              | -                                                                                 | None  |
| Storage Length           | -                                                                                 | -      | -     | -                                                                                 | 0                                                                                 | -     |
| Veh in Median Storage, # | 0                                                                                 | -      | -     | 0                                                                                 | 0                                                                                 | -     |
| Grade, %                 | 0                                                                                 | -      | -     | 0                                                                                 | 0                                                                                 | -     |
| Peak Hour Factor         | 92                                                                                | 92     | 92    | 92                                                                                | 92                                                                                | 92    |
| Heavy Vehicles, %        | 2                                                                                 | 2      | 2     | 2                                                                                 | 2                                                                                 | 2     |
| Mvmt Flow                | 201                                                                               | 0      | 0     | 92                                                                                | 0                                                                                 | 0     |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Major/Minor              | Major1                                                                            | Major2 |       | Minor1                                                                            |                                                                                   |       |
| Conflicting Flow All     | 0                                                                                 | 0      | 201   | 0                                                                                 | 293                                                                               | 201   |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 201                                                                               | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 92                                                                                | -     |
| Critical Hdwy            | -                                                                                 | -      | 4.12  | -                                                                                 | 6.42                                                                              | 6.22  |
| Critical Hdwy Stg 1      | -                                                                                 | -      | -     | -                                                                                 | 5.42                                                                              | -     |
| Critical Hdwy Stg 2      | -                                                                                 | -      | -     | -                                                                                 | 5.42                                                                              | -     |
| Follow-up Hdwy           | -                                                                                 | -      | 2.218 | -                                                                                 | 3.518                                                                             | 3.318 |
| Pot Cap-1 Maneuver       | -                                                                                 | -      | 1371  | -                                                                                 | 698                                                                               | 840   |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 833                                                                               | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 932                                                                               | -     |
| Platoon blocked, %       | -                                                                                 | -      |       | -                                                                                 |                                                                                   |       |
| Mov Cap-1 Maneuver       | -                                                                                 | -      | 1371  | -                                                                                 | 698                                                                               | 840   |
| Mov Cap-2 Maneuver       | -                                                                                 | -      | -     | -                                                                                 | 698                                                                               | -     |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 833                                                                               | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 932                                                                               | -     |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Approach                 | EB                                                                                | WB     |       | NB                                                                                |                                                                                   |       |
| HCM Control Delay, s     | 0                                                                                 | 0      |       | 0                                                                                 |                                                                                   |       |
| HCM LOS                  |                                                                                   |        |       | A                                                                                 |                                                                                   |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Minor Lane/Major Mvmt    | NBLn1                                                                             | EBT    | EBR   | WBL                                                                               | WBT                                                                               |       |
| Capacity (veh/h)         | -                                                                                 | -      | -     | 1371                                                                              | -                                                                                 |       |
| HCM Lane V/C Ratio       | -                                                                                 | -      | -     | -                                                                                 | -                                                                                 |       |
| HCM Control Delay (s)    | 0                                                                                 | -      | -     | 0                                                                                 | -                                                                                 |       |
| HCM Lane LOS             | A                                                                                 | -      | -     | A                                                                                 | -                                                                                 |       |
| HCM 95th %tile Q(veh)    | -                                                                                 | -      | -     | 0                                                                                 | -                                                                                 |       |

HCM 2010 TWSC  
30: Graham Side Rd & Road 3E

AM Peak Hour  
2022 Future Background

| Intersection             |        |              |      |        |              |      |        |              |       |        |              |       |
|--------------------------|--------|--------------|------|--------|--------------|------|--------|--------------|-------|--------|--------------|-------|
| Int Delay, s/veh         | 6.3    |              |      |        |              |      |        |              |       |        |              |       |
| Movement                 | EBL    | EBT          | EBR  | WBL    | WBT          | WBR  | NBL    | NBT          | NBR   | SBL    | SBT          | SBR   |
| Lane Configurations      |        | <div>↕</div> |      |        | <div>↕</div> |      |        | <div>↕</div> |       |        | <div>↕</div> |       |
| Traffic Vol, veh/h       | 25     | 150          | 10   | 20     | 60           | 5    | 5      | 85           | 50    | 15     | 55           | 15    |
| Future Vol, veh/h        | 25     | 150          | 10   | 20     | 60           | 5    | 5      | 85           | 50    | 15     | 55           | 15    |
| Conflicting Peds, #/hr   | 0      | 0            | 0    | 0      | 0            | 0    | 0      | 0            | 0     | 0      | 0            | 0     |
| Sign Control             | Free   | Free         | Free | Free   | Free         | Free | Stop   | Stop         | Stop  | Stop   | Stop         | Stop  |
| RT Channelized           | -      | -            | None | -      | -            | None | -      | -            | None  | -      | -            | None  |
| Storage Length           | -      | -            | -    | -      | -            | -    | -      | -            | -     | -      | -            | -     |
| Veh in Median Storage, # | -      | 0            | -    | -      | 0            | -    | -      | 0            | -     | -      | 0            | -     |
| Grade, %                 | -      | 0            | -    | -      | 0            | -    | -      | 0            | -     | -      | 0            | -     |
| Peak Hour Factor         | 92     | 92           | 92   | 92     | 92           | 92   | 92     | 92           | 92    | 92     | 92           | 92    |
| Heavy Vehicles, %        | 2      | 2            | 2    | 2      | 2            | 2    | 2      | 2            | 2     | 2      | 2            | 2     |
| Mvmt Flow                | 27     | 163          | 11   | 22     | 65           | 5    | 5      | 92           | 54    | 16     | 60           | 16    |
|                          |        |              |      |        |              |      |        |              |       |        |              |       |
| Major/Minor              | Major1 |              |      | Major2 |              |      | Minor1 |              |       | Minor2 |              |       |
| Conflicting Flow All     | 70     | 0            | 0    | 174    | 0            | 0    | 373    | 337          | 169   | 408    | 340          | 68    |
| Stage 1                  | -      | -            | -    | -      | -            | -    | 223    | 223          | -     | 112    | 112          | -     |
| Stage 2                  | -      | -            | -    | -      | -            | -    | 150    | 114          | -     | 296    | 228          | -     |
| Critical Hdwy            | 4.12   | -            | -    | 4.12   | -            | -    | 7.12   | 6.52         | 6.22  | 7.12   | 6.52         | 6.22  |
| Critical Hdwy Stg 1      | -      | -            | -    | -      | -            | -    | 6.12   | 5.52         | -     | 6.12   | 5.52         | -     |
| Critical Hdwy Stg 2      | -      | -            | -    | -      | -            | -    | 6.12   | 5.52         | -     | 6.12   | 5.52         | -     |
| Follow-up Hdwy           | 2.218  | -            | -    | 2.218  | -            | -    | 3.518  | 4.018        | 3.318 | 3.518  | 4.018        | 3.318 |
| Pot Cap-1 Maneuver       | 1531   | -            | -    | 1403   | -            | -    | 584    | 584          | 875   | 554    | 582          | 995   |
| Stage 1                  | -      | -            | -    | -      | -            | -    | 780    | 719          | -     | 893    | 803          | -     |
| Stage 2                  | -      | -            | -    | -      | -            | -    | 853    | 801          | -     | 712    | 715          | -     |
| Platoon blocked, %       |        | -            | -    |        | -            | -    |        |              |       |        |              |       |
| Mov Cap-1 Maneuver       | 1531   | -            | -    | 1403   | -            | -    | 513    | 563          | 875   | 442    | 561          | 995   |
| Mov Cap-2 Maneuver       | -      | -            | -    | -      | -            | -    | 513    | 563          | -     | 442    | 561          | -     |
| Stage 1                  | -      | -            | -    | -      | -            | -    | 764    | 705          | -     | 875    | 790          | -     |
| Stage 2                  | -      | -            | -    | -      | -            | -    | 763    | 788          | -     | 569    | 701          | -     |
|                          |        |              |      |        |              |      |        |              |       |        |              |       |
|                          |        |              |      |        |              |      |        |              |       |        |              |       |
| Approach                 | EB     |              |      | WB     |              |      | NB     |              |       | SB     |              |       |
| HCM Control Delay, s     | 1      |              |      | 1.8    |              |      | 12.3   |              |       | 12.4   |              |       |
| HCM LOS                  |        |              |      |        |              |      | B      |              |       | B      |              |       |
|                          |        |              |      |        |              |      |        |              |       |        |              |       |
| Minor Lane/Major Mvmt    | NBLn1  | EBL          | EBT  | EBR    | WBL          | WBT  | WBR    | SBLn1        |       |        |              |       |
| Capacity (veh/h)         | 643    | 1531         | -    | -      | 1403         | -    | -      | 578          |       |        |              |       |
| HCM Lane V/C Ratio       | 0.237  | 0.018        | -    | -      | 0.015        | -    | -      | 0.16         |       |        |              |       |
| HCM Control Delay (s)    | 12.3   | 7.4          | 0    | -      | 7.6          | 0    | -      | 12.4         |       |        |              |       |
| HCM Lane LOS             | B      | A            | A    | -      | A            | A    | -      | B            |       |        |              |       |
| HCM 95th %tile O(veh)    | 0.9    | 0.1          | -    | -      | 0            | -    | -      | 0.6          |       |        |              |       |

| Intersection             |        |              |        |       |              |        |       |              |        |       |              |      |
|--------------------------|--------|--------------|--------|-------|--------------|--------|-------|--------------|--------|-------|--------------|------|
| Int Delay, s/veh         | 5.7    |              |        |       |              |        |       |              |        |       |              |      |
| Movement                 | EBL    | EBT          | EBR    | WBL   | WBT          | WBR    | NBL   | NBT          | NBR    | SBL   | SBT          | SBR  |
| Lane Configurations      |        | <div>↕</div> |        |       | <div>↕</div> |        |       | <div>↕</div> |        |       | <div>↕</div> |      |
| Traffic Vol, veh/h       | 10     | 25           | 15     | 50    | 50           | 30     | 15    | 335          | 25     | 15    | 490          | 5    |
| Future Vol, veh/h        | 10     | 25           | 15     | 50    | 50           | 30     | 15    | 335          | 25     | 15    | 490          | 5    |
| Conflicting Peds, #/hr   | 0      | 0            | 0      | 0     | 0            | 0      | 0     | 0            | 0      | 0     | 0            | 0    |
| Sign Control             | Stop   | Stop         | Stop   | Stop  | Stop         | Stop   | Free  | Free         | Free   | Free  | Free         | Free |
| RT Channelized           | -      | -            | None   | -     | -            | None   | -     | -            | None   | -     | -            | None |
| Storage Length           | -      | -            | -      | -     | -            | -      | -     | -            | -      | -     | -            | -    |
| Veh in Median Storage, # | -      | 0            | -      | -     | 0            | -      | -     | 0            | -      | -     | 0            | -    |
| Grade, %                 | -      | 0            | -      | -     | 0            | -      | -     | 0            | -      | -     | 0            | -    |
| Peak Hour Factor         | 92     | 92           | 92     | 92    | 92           | 92     | 92    | 92           | 92     | 92    | 92           | 92   |
| Heavy Vehicles, %        | 2      | 2            | 2      | 2     | 2            | 2      | 2     | 2            | 2      | 2     | 2            | 2    |
| Mvmt Flow                | 11     | 27           | 16     | 54    | 54           | 33     | 16    | 364          | 27     | 16    | 533          | 5    |
|                          |        |              |        |       |              |        |       |              |        |       |              |      |
| Major/Minor              | Minor2 |              | Minor1 |       |              | Major1 |       |              | Major2 |       |              |      |
| Conflicting Flow All     | 1021   | 991          | 536    | 999   | 980          | 378    | 538   | 0            | 0      | 391   | 0            | 0    |
| Stage 1                  | 568    | 568          | -      | 410   | 410          | -      | -     | -            | -      | -     | -            | -    |
| Stage 2                  | 453    | 423          | -      | 589   | 570          | -      | -     | -            | -      | -     | -            | -    |
| Critical Hdwy            | 7.12   | 6.52         | 6.22   | 7.12  | 6.52         | 6.22   | 4.12  | -            | -      | 4.12  | -            | -    |
| Critical Hdwy Stg 1      | 6.12   | 5.52         | -      | 6.12  | 5.52         | -      | -     | -            | -      | -     | -            | -    |
| Critical Hdwy Stg 2      | 6.12   | 5.52         | -      | 6.12  | 5.52         | -      | -     | -            | -      | -     | -            | -    |
| Follow-up Hdwy           | 3.518  | 4.018        | 3.318  | 3.518 | 4.018        | 3.318  | 2.218 | -            | -      | 2.218 | -            | -    |
| Pot Cap-1 Maneuver       | 215    | 246          | 545    | 222   | 250          | 669    | 1030  | -            | -      | 1168  | -            | -    |
| Stage 1                  | 508    | 506          | -      | 619   | 595          | -      | -     | -            | -      | -     | -            | -    |
| Stage 2                  | 586    | 588          | -      | 494   | 505          | -      | -     | -            | -      | -     | -            | -    |
| Platoon blocked, %       |        |              |        |       |              |        |       | -            | -      |       | -            | -    |
| Mov Cap-1 Maneuver       | 164    | 236          | 545    | 190   | 240          | 669    | 1030  | -            | -      | 1168  | -            | -    |
| Mov Cap-2 Maneuver       | 164    | 236          | -      | 190   | 240          | -      | -     | -            | -      | -     | -            | -    |
| Stage 1                  | 498    | 496          | -      | 607   | 583          | -      | -     | -            | -      | -     | -            | -    |
| Stage 2                  | 495    | 576          | -      | 444   | 495          | -      | -     | -            | -      | -     | -            | -    |
|                          |        |              |        |       |              |        |       |              |        |       |              |      |
| Approach                 | EB     |              | WB     |       |              | NB     |       |              | SB     |       |              |      |
| HCM Control Delay, s     | 22.7   |              | 36.1   |       |              | 0.3    |       |              | 0.2    |       |              |      |
| HCM LOS                  | C      |              | E      |       |              |        |       |              |        |       |              |      |
|                          |        |              |        |       |              |        |       |              |        |       |              |      |
| Minor Lane/Major Mvmt    | NBL    | NBT          | NBR    | EBLn1 | WBLn1        | SBL    | SBT   | SBR          |        |       |              |      |
| Capacity (veh/h)         | 1030   | -            | -      | 257   | 252          | 1168   | -     | -            |        |       |              |      |
| HCM Lane V/C Ratio       | 0.016  | -            | -      | 0.211 | 0.561        | 0.014  | -     | -            |        |       |              |      |
| HCM Control Delay (s)    | 8.6    | 0            | -      | 22.7  | 36.1         | 8.1    | 0     | -            |        |       |              |      |
| HCM Lane LOS             | A      | A            | -      | C     | E            | A      | A     | -            |        |       |              |      |
| HCM 95th %tile Q(veh)    | 0      | -            | -      | 0.8   | 3.1          | 0      | -     | -            |        |       |              |      |

| Intersection             |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|--------------------------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------|
| Int Delay, s/veh         | 0                                                                                 |        |       |                                                                                   |                                                                                   |       |
| Movement                 | EBT                                                                               | EBR    | WBL   | WBT                                                                               | NBL                                                                               | NBR   |
| Lane Configurations      |  |        |       |  |  |       |
| Traffic Vol, veh/h       | 70                                                                                | 0      | 0     | 135                                                                               | 0                                                                                 | 0     |
| Future Vol, veh/h        | 70                                                                                | 0      | 0     | 135                                                                               | 0                                                                                 | 0     |
| Conflicting Peds, #/hr   | 0                                                                                 | 0      | 0     | 0                                                                                 | 0                                                                                 | 0     |
| Sign Control             | Free                                                                              | Free   | Free  | Free                                                                              | Stop                                                                              | Stop  |
| RT Channelized           | -                                                                                 | None   | -     | None                                                                              | -                                                                                 | None  |
| Storage Length           | -                                                                                 | -      | -     | -                                                                                 | 0                                                                                 | -     |
| Veh in Median Storage, # | 0                                                                                 | -      | -     | 0                                                                                 | 0                                                                                 | -     |
| Grade, %                 | 0                                                                                 | -      | -     | 0                                                                                 | 0                                                                                 | -     |
| Peak Hour Factor         | 92                                                                                | 92     | 92    | 92                                                                                | 92                                                                                | 92    |
| Heavy Vehicles, %        | 2                                                                                 | 2      | 2     | 2                                                                                 | 2                                                                                 | 2     |
| Mvmt Flow                | 76                                                                                | 0      | 0     | 147                                                                               | 0                                                                                 | 0     |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Major/Minor              | Major1                                                                            | Major2 |       | Minor1                                                                            |                                                                                   |       |
| Conflicting Flow All     | 0                                                                                 | 0      | 76    | 0                                                                                 | 223                                                                               | 76    |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 76                                                                                | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 147                                                                               | -     |
| Critical Hdwy            | -                                                                                 | -      | 4.12  | -                                                                                 | 6.42                                                                              | 6.22  |
| Critical Hdwy Stg 1      | -                                                                                 | -      | -     | -                                                                                 | 5.42                                                                              | -     |
| Critical Hdwy Stg 2      | -                                                                                 | -      | -     | -                                                                                 | 5.42                                                                              | -     |
| Follow-up Hdwy           | -                                                                                 | -      | 2.218 | -                                                                                 | 3.518                                                                             | 3.318 |
| Pot Cap-1 Maneuver       | -                                                                                 | -      | 1523  | -                                                                                 | 765                                                                               | 985   |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 947                                                                               | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 880                                                                               | -     |
| Platoon blocked, %       | -                                                                                 | -      |       | -                                                                                 |                                                                                   |       |
| Mov Cap-1 Maneuver       | -                                                                                 | -      | 1523  | -                                                                                 | 765                                                                               | 985   |
| Mov Cap-2 Maneuver       | -                                                                                 | -      | -     | -                                                                                 | 765                                                                               | -     |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 947                                                                               | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 880                                                                               | -     |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Approach                 | EB                                                                                | WB     |       | NB                                                                                |                                                                                   |       |
| HCM Control Delay, s     | 0                                                                                 | 0      |       | 0                                                                                 |                                                                                   |       |
| HCM LOS                  |                                                                                   |        |       | A                                                                                 |                                                                                   |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Minor Lane/Major Mvmt    | NBLn1                                                                             | EBT    | EBR   | WBL                                                                               | WBT                                                                               |       |
| Capacity (veh/h)         | -                                                                                 | -      | -     | 1523                                                                              | -                                                                                 |       |
| HCM Lane V/C Ratio       | -                                                                                 | -      | -     | -                                                                                 | -                                                                                 |       |
| HCM Control Delay (s)    | 0                                                                                 | -      | -     | 0                                                                                 | -                                                                                 |       |
| HCM Lane LOS             | A                                                                                 | -      | -     | A                                                                                 | -                                                                                 |       |
| HCM 95th %tile Q(veh)    | -                                                                                 | -      | -     | 0                                                                                 | -                                                                                 |       |

| Intersection             |        |       |      |        |       |      |        |       |       |        |       |       |
|--------------------------|--------|-------|------|--------|-------|------|--------|-------|-------|--------|-------|-------|
| Int Delay, s/veh         | 7.7    |       |      |        |       |      |        |       |       |        |       |       |
| Movement                 | EBL    | EBT   | EBR  | WBL    | WBT   | WBR  | NBL    | NBT   | NBR   | SBL    | SBT   | SBR   |
| Lane Configurations      |        | ↕     |      |        | ↕     |      |        | ↕     |       |        | ↕     |       |
| Traffic Vol, veh/h       | 10     | 50    | 10   | 65     | 105   | 20   | 5      | 65    | 25    | 15     | 120   | 20    |
| Future Vol, veh/h        | 10     | 50    | 10   | 65     | 105   | 20   | 5      | 65    | 25    | 15     | 120   | 20    |
| Conflicting Peds, #/hr   | 0      | 0     | 0    | 0      | 0     | 0    | 0      | 0     | 0     | 0      | 0     | 0     |
| Sign Control             | Free   | Free  | Free | Free   | Free  | Free | Stop   | Stop  | Stop  | Stop   | Stop  | Stop  |
| RT Channelized           | -      | -     | None | -      | -     | None | -      | -     | None  | -      | -     | None  |
| Storage Length           | -      | -     | -    | -      | -     | -    | -      | -     | -     | -      | -     | -     |
| Veh in Median Storage, # | -      | 0     | -    | -      | 0     | -    | -      | 0     | -     | -      | 0     | -     |
| Grade, %                 | -      | 0     | -    | -      | 0     | -    | -      | 0     | -     | -      | 0     | -     |
| Peak Hour Factor         | 92     | 92    | 92   | 92     | 92    | 92   | 92     | 92    | 92    | 92     | 92    | 92    |
| Heavy Vehicles, %        | 2      | 2     | 2    | 2      | 2     | 2    | 2      | 2     | 2     | 2      | 2     | 2     |
| Mvmt Flow                | 11     | 54    | 11   | 71     | 114   | 22   | 5      | 71    | 27    | 16     | 130   | 22    |
| Major/Minor              | Major1 |       |      | Major2 |       |      | Minor1 |       |       | Minor2 |       |       |
| Conflicting Flow All     | 136    | 0     | 0    | 65     | 0     | 0    | 425    | 360   | 60    | 398    | 354   | 125   |
| Stage 1                  | -      | -     | -    | -      | -     | -    | 82     | 82    | -     | 267    | 267   | -     |
| Stage 2                  | -      | -     | -    | -      | -     | -    | 343    | 278   | -     | 131    | 87    | -     |
| Critical Hdwy            | 4.12   | -     | -    | 4.12   | -     | -    | 7.12   | 6.52  | 6.22  | 7.12   | 6.52  | 6.22  |
| Critical Hdwy Stg 1      | -      | -     | -    | -      | -     | -    | 6.12   | 5.52  | -     | 6.12   | 5.52  | -     |
| Critical Hdwy Stg 2      | -      | -     | -    | -      | -     | -    | 6.12   | 5.52  | -     | 6.12   | 5.52  | -     |
| Follow-up Hdwy           | 2.218  | -     | -    | 2.218  | -     | -    | 3.518  | 4.018 | 3.318 | 3.518  | 4.018 | 3.318 |
| Pot Cap-1 Maneuver       | 1448   | -     | -    | 1537   | -     | -    | 540    | 567   | 1005  | 562    | 571   | 926   |
| Stage 1                  | -      | -     | -    | -      | -     | -    | 926    | 827   | -     | 738    | 688   | -     |
| Stage 2                  | -      | -     | -    | -      | -     | -    | 672    | 680   | -     | 873    | 823   | -     |
| Platoon blocked, %       | -      | -     | -    | -      | -     | -    | -      | -     | -     | -      | -     | -     |
| Mov Cap-1 Maneuver       | 1448   | -     | -    | 1537   | -     | -    | 411    | 534   | 1005  | 470    | 538   | 926   |
| Mov Cap-2 Maneuver       | -      | -     | -    | -      | -     | -    | 411    | 534   | -     | 470    | 538   | -     |
| Stage 1                  | -      | -     | -    | -      | -     | -    | 919    | 820   | -     | 732    | 654   | -     |
| Stage 2                  | -      | -     | -    | -      | -     | -    | 499    | 646   | -     | 770    | 816   | -     |
| Approach                 | EB     |       |      | WB     |       |      | NB     |       |       | SB     |       |       |
| HCM Control Delay, s     | 1.1    |       |      | 2.6    |       |      | 12.3   |       |       | 14.2   |       |       |
| HCM LOS                  |        |       |      |        |       |      | B      |       |       | B      |       |       |
| Minor Lane/Major Mvmt    | NBLn1  | EBL   | EBT  | EBR    | WBL   | WBT  | WBR    | SBLn1 |       |        |       |       |
| Capacity (veh/h)         | 598    | 1448  | -    | -      | 1537  | -    | -      | 560   |       |        |       |       |
| HCM Lane V/C Ratio       | 0.173  | 0.008 | -    | -      | 0.046 | -    | -      | 0.301 |       |        |       |       |
| HCM Control Delay (s)    | 12.3   | 7.5   | 0    | -      | 7.5   | 0    | -      | 14.2  |       |        |       |       |
| HCM Lane LOS             | B      | A     | A    | -      | A     | A    | -      | B     |       |        |       |       |
| HCM 95th %tile Q(veh)    | 0.6    | 0     | -    | -      | 0.1   | -    | -      | 1.3   |       |        |       |       |

| Intersection             |        |                                                                                   |        |       |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
|--------------------------|--------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|-------|--------|-----------------------------------------------------------------------------------|------|-------|-------------------------------------------------------------------------------------|------|
| Int Delay, s/veh         | 3.8    |                                                                                   |        |       |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
| Movement                 | EBL    | EBT                                                                               | EBR    | WBL   | WBT                                                                               | WBR   | NBL    | NBT                                                                               | NBR  | SBL   | SBT                                                                                 | SBR  |
| Lane Configurations      |        |  |        |       |  |       |        |  |      |       |  |      |
| Traffic Vol, veh/h       | 5      | 30                                                                                | 10     | 35    | 25                                                                                | 25    | 5      | 480                                                                               | 120  | 40    | 315                                                                                 | 5    |
| Future Vol, veh/h        | 5      | 30                                                                                | 10     | 35    | 25                                                                                | 25    | 5      | 480                                                                               | 120  | 40    | 315                                                                                 | 5    |
| Conflicting Peds, #/hr   | 0      | 0                                                                                 | 0      | 0     | 0                                                                                 | 0     | 0      | 0                                                                                 | 0    | 0     | 0                                                                                   | 0    |
| Sign Control             | Stop   | Stop                                                                              | Stop   | Stop  | Stop                                                                              | Stop  | Free   | Free                                                                              | Free | Free  | Free                                                                                | Free |
| RT Channelized           | -      | -                                                                                 | None   | -     | -                                                                                 | None  | -      | -                                                                                 | None | -     | -                                                                                   | None |
| Storage Length           | -      | -                                                                                 | -      | -     | -                                                                                 | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Veh in Median Storage, # | -      | 0                                                                                 | -      | -     | 0                                                                                 | -     | -      | 0                                                                                 | -    | -     | 0                                                                                   | -    |
| Grade, %                 | -      | 0                                                                                 | -      | -     | 0                                                                                 | -     | -      | 0                                                                                 | -    | -     | 0                                                                                   | -    |
| Peak Hour Factor         | 92     | 92                                                                                | 92     | 92    | 92                                                                                | 92    | 92     | 92                                                                                | 92   | 92    | 92                                                                                  | 92   |
| Heavy Vehicles, %        | 2      | 2                                                                                 | 2      | 2     | 2                                                                                 | 2     | 2      | 2                                                                                 | 2    | 2     | 2                                                                                   | 2    |
| Mvmt Flow                | 5      | 33                                                                                | 11     | 38    | 27                                                                                | 27    | 5      | 522                                                                               | 130  | 43    | 342                                                                                 | 5    |
|                          |        |                                                                                   |        |       |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
| Major/Minor              | Minor2 |                                                                                   | Minor1 |       | Major1                                                                            |       | Major2 |                                                                                   |      |       |                                                                                     |      |
| Conflicting Flow All     | 1055   | 1093                                                                              | 345    | 1050  | 1030                                                                              | 587   | 347    | 0                                                                                 | 0    | 652   | 0                                                                                   | 0    |
| Stage 1                  | 431    | 431                                                                               | -      | 597   | 597                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Stage 2                  | 624    | 662                                                                               | -      | 453   | 433                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Critical Hdwy            | 7.12   | 6.52                                                                              | 6.22   | 7.12  | 6.52                                                                              | 6.22  | 4.12   | -                                                                                 | -    | 4.12  | -                                                                                   | -    |
| Critical Hdwy Stg 1      | 6.12   | 5.52                                                                              | -      | 6.12  | 5.52                                                                              | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Critical Hdwy Stg 2      | 6.12   | 5.52                                                                              | -      | 6.12  | 5.52                                                                              | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Follow-up Hdwy           | 3.518  | 4.018                                                                             | 3.318  | 3.518 | 4.018                                                                             | 3.318 | 2.218  | -                                                                                 | -    | 2.218 | -                                                                                   | -    |
| Pot Cap-1 Maneuver       | 204    | 214                                                                               | 698    | 205   | 233                                                                               | 510   | 1212   | -                                                                                 | -    | 935   | -                                                                                   | -    |
| Stage 1                  | 603    | 583                                                                               | -      | 490   | 491                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Stage 2                  | 473    | 459                                                                               | -      | 586   | 582                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Platoon blocked, %       |        |                                                                                   |        |       |                                                                                   |       |        | -                                                                                 | -    |       | -                                                                                   | -    |
| Mov Cap-1 Maneuver       | 166    | 200                                                                               | 698    | 168   | 218                                                                               | 510   | 1212   | -                                                                                 | -    | 935   | -                                                                                   | -    |
| Mov Cap-2 Maneuver       | 166    | 200                                                                               | -      | 168   | 218                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Stage 1                  | 599    | 550                                                                               | -      | 487   | 488                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Stage 2                  | 420    | 456                                                                               | -      | 512   | 549                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
|                          |        |                                                                                   |        |       |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
| Approach                 | EB     |                                                                                   | WB     |       | NB                                                                                |       | SB     |                                                                                   |      |       |                                                                                     |      |
| HCM Control Delay, s     | 24.7   |                                                                                   | 31.1   |       | 0.1                                                                               |       | 1      |                                                                                   |      |       |                                                                                     |      |
| HCM LOS                  | C      |                                                                                   | D      |       |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
|                          |        |                                                                                   |        |       |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
| Minor Lane/Major Mvmt    | NBL    | NBT                                                                               | NBR    | EBLn1 | WBLn1                                                                             | SBL   | SBT    | SBR                                                                               |      |       |                                                                                     |      |
| Capacity (veh/h)         | 1212   | -                                                                                 | -      | 231   | 228                                                                               | 935   | -      | -                                                                                 |      |       |                                                                                     |      |
| HCM Lane V/C Ratio       | 0.004  | -                                                                                 | -      | 0.212 | 0.405                                                                             | 0.047 | -      | -                                                                                 |      |       |                                                                                     |      |
| HCM Control Delay (s)    | 8      | 0                                                                                 | -      | 24.7  | 31.1                                                                              | 9     | 0      | -                                                                                 |      |       |                                                                                     |      |
| HCM Lane LOS             | A      | A                                                                                 | -      | C     | D                                                                                 | A     | A      | -                                                                                 |      |       |                                                                                     |      |
| HCM 95th %tile Q(veh)    | 0      | -                                                                                 | -      | 0.8   | 1.8                                                                               | 0.1   | -      | -                                                                                 |      |       |                                                                                     |      |

| Intersection             |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|--------------------------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------|
| Int Delay, s/veh         | 0                                                                                 |        |       |                                                                                   |                                                                                   |       |
| Movement                 | EBT                                                                               | EBR    | WBL   | WBT                                                                               | NBL                                                                               | NBR   |
| Lane Configurations      |  |        |       |  |  |       |
| Traffic Vol, veh/h       | 190                                                                               | 0      | 0     | 85                                                                                | 0                                                                                 | 0     |
| Future Vol, veh/h        | 190                                                                               | 0      | 0     | 85                                                                                | 0                                                                                 | 0     |
| Conflicting Peds, #/hr   | 0                                                                                 | 0      | 0     | 0                                                                                 | 0                                                                                 | 0     |
| Sign Control             | Free                                                                              | Free   | Free  | Free                                                                              | Stop                                                                              | Stop  |
| RT Channelized           | -                                                                                 | None   | -     | None                                                                              | -                                                                                 | None  |
| Storage Length           | -                                                                                 | -      | -     | -                                                                                 | 0                                                                                 | -     |
| Veh in Median Storage, # | 0                                                                                 | -      | -     | 0                                                                                 | 0                                                                                 | -     |
| Grade, %                 | 0                                                                                 | -      | -     | 0                                                                                 | 0                                                                                 | -     |
| Peak Hour Factor         | 92                                                                                | 92     | 92    | 92                                                                                | 92                                                                                | 92    |
| Heavy Vehicles, %        | 2                                                                                 | 2      | 2     | 2                                                                                 | 2                                                                                 | 2     |
| Mvmt Flow                | 207                                                                               | 0      | 0     | 92                                                                                | 0                                                                                 | 0     |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Major/Minor              | Major1                                                                            | Major2 |       | Minor1                                                                            |                                                                                   |       |
| Conflicting Flow All     | 0                                                                                 | 0      | 207   | 0                                                                                 | 299                                                                               | 207   |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 207                                                                               | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 92                                                                                | -     |
| Critical Hdwy            | -                                                                                 | -      | 4.12  | -                                                                                 | 6.42                                                                              | 6.22  |
| Critical Hdwy Stg 1      | -                                                                                 | -      | -     | -                                                                                 | 5.42                                                                              | -     |
| Critical Hdwy Stg 2      | -                                                                                 | -      | -     | -                                                                                 | 5.42                                                                              | -     |
| Follow-up Hdwy           | -                                                                                 | -      | 2.218 | -                                                                                 | 3.518                                                                             | 3.318 |
| Pot Cap-1 Maneuver       | -                                                                                 | -      | 1364  | -                                                                                 | 692                                                                               | 833   |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 828                                                                               | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 932                                                                               | -     |
| Platoon blocked, %       | -                                                                                 | -      |       | -                                                                                 |                                                                                   |       |
| Mov Cap-1 Maneuver       | -                                                                                 | -      | 1364  | -                                                                                 | 692                                                                               | 833   |
| Mov Cap-2 Maneuver       | -                                                                                 | -      | -     | -                                                                                 | 692                                                                               | -     |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 828                                                                               | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 932                                                                               | -     |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Approach                 | EB                                                                                | WB     |       | NB                                                                                |                                                                                   |       |
| HCM Control Delay, s     | 0                                                                                 | 0      |       | 0                                                                                 |                                                                                   |       |
| HCM LOS                  |                                                                                   |        |       |                                                                                   | A                                                                                 |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Minor Lane/Major Mvmt    | NBLn1                                                                             | EBT    | EBR   | WBL                                                                               | WBT                                                                               |       |
| Capacity (veh/h)         | -                                                                                 | -      | -     | 1364                                                                              | -                                                                                 |       |
| HCM Lane V/C Ratio       | -                                                                                 | -      | -     | -                                                                                 | -                                                                                 |       |
| HCM Control Delay (s)    | 0                                                                                 | -      | -     | 0                                                                                 | -                                                                                 |       |
| HCM Lane LOS             | A                                                                                 | -      | -     | A                                                                                 | -                                                                                 |       |
| HCM 95th %tile Q(veh)    | -                                                                                 | -      | -     | 0                                                                                 | -                                                                                 |       |

| Intersection             |        |              |      |        |              |      |        |              |       |        |              |       |
|--------------------------|--------|--------------|------|--------|--------------|------|--------|--------------|-------|--------|--------------|-------|
| Int Delay, s/veh         | 6.5    |              |      |        |              |      |        |              |       |        |              |       |
| Movement                 | EBL    | EBT          | EBR  | WBL    | WBT          | WBR  | NBL    | NBT          | NBR   | SBL    | SBT          | SBR   |
| Lane Configurations      |        | <div>↕</div> |      |        | <div>↕</div> |      |        | <div>↕</div> |       |        | <div>↕</div> |       |
| Traffic Vol, veh/h       | 25     | 155          | 10   | 20     | 65           | 5    | 10     | 90           | 50    | 15     | 55           | 15    |
| Future Vol, veh/h        | 25     | 155          | 10   | 20     | 65           | 5    | 10     | 90           | 50    | 15     | 55           | 15    |
| Conflicting Peds, #/hr   | 0      | 0            | 0    | 0      | 0            | 0    | 0      | 0            | 0     | 0      | 0            | 0     |
| Sign Control             | Free   | Free         | Free | Free   | Free         | Free | Stop   | Stop         | Stop  | Stop   | Stop         | Stop  |
| RT Channelized           | -      | -            | None | -      | -            | None | -      | -            | None  | -      | -            | None  |
| Storage Length           | -      | -            | -    | -      | -            | -    | -      | -            | -     | -      | -            | -     |
| Veh in Median Storage, # | -      | 0            | -    | -      | 0            | -    | -      | 0            | -     | -      | 0            | -     |
| Grade, %                 | -      | 0            | -    | -      | 0            | -    | -      | 0            | -     | -      | 0            | -     |
| Peak Hour Factor         | 92     | 92           | 92   | 92     | 92           | 92   | 92     | 92           | 92    | 92     | 92           | 92    |
| Heavy Vehicles, %        | 2      | 2            | 2    | 2      | 2            | 2    | 2      | 2            | 2     | 2      | 2            | 2     |
| Mvmt Flow                | 27     | 168          | 11   | 22     | 71           | 5    | 11     | 98           | 54    | 16     | 60           | 16    |
|                          |        |              |      |        |              |      |        |              |       |        |              |       |
| Major/Minor              | Major1 |              |      | Major2 |              |      | Minor1 |              |       | Minor2 |              |       |
| Conflicting Flow All     | 76     | 0            | 0    | 179    | 0            | 0    | 384    | 348          | 174   | 422    | 351          | 74    |
| Stage 1                  | -      | -            | -    | -      | -            | -    | 228    | 228          | -     | 118    | 118          | -     |
| Stage 2                  | -      | -            | -    | -      | -            | -    | 156    | 120          | -     | 304    | 233          | -     |
| Critical Hdwy            | 4.12   | -            | -    | 4.12   | -            | -    | 7.12   | 6.52         | 6.22  | 7.12   | 6.52         | 6.22  |
| Critical Hdwy Stg 1      | -      | -            | -    | -      | -            | -    | 6.12   | 5.52         | -     | 6.12   | 5.52         | -     |
| Critical Hdwy Stg 2      | -      | -            | -    | -      | -            | -    | 6.12   | 5.52         | -     | 6.12   | 5.52         | -     |
| Follow-up Hdwy           | 2.218  | -            | -    | 2.218  | -            | -    | 3.518  | 4.018        | 3.318 | 3.518  | 4.018        | 3.318 |
| Pot Cap-1 Maneuver       | 1523   | -            | -    | 1397   | -            | -    | 574    | 576          | 869   | 542    | 573          | 988   |
| Stage 1                  | -      | -            | -    | -      | -            | -    | 775    | 715          | -     | 887    | 798          | -     |
| Stage 2                  | -      | -            | -    | -      | -            | -    | 846    | 796          | -     | 705    | 712          | -     |
| Platoon blocked, %       |        | -            | -    |        | -            | -    |        |              |       |        |              |       |
| Mov Cap-1 Maneuver       | 1523   | -            | -    | 1397   | -            | -    | 504    | 555          | 869   | 428    | 552          | 988   |
| Mov Cap-2 Maneuver       | -      | -            | -    | -      | -            | -    | 504    | 555          | -     | 428    | 552          | -     |
| Stage 1                  | -      | -            | -    | -      | -            | -    | 760    | 701          | -     | 869    | 785          | -     |
| Stage 2                  | -      | -            | -    | -      | -            | -    | 756    | 783          | -     | 557    | 698          | -     |
|                          |        |              |      |        |              |      |        |              |       |        |              |       |
|                          |        |              |      |        |              |      |        |              |       |        |              |       |
| Approach                 | EB     |              |      | WB     |              |      | NB     |              |       | SB     |              |       |
| HCM Control Delay, s     | 1      |              |      | 1.7    |              |      | 12.8   |              |       | 12.6   |              |       |
| HCM LOS                  |        |              |      |        |              |      | B      |              |       | B      |              |       |
|                          |        |              |      |        |              |      |        |              |       |        |              |       |
| Minor Lane/Major Mvmt    | NBLn1  | EBL          | EBT  | EBR    | WBL          | WBT  | WBR    | SBLn1        |       |        |              |       |
| Capacity (veh/h)         | 626    | 1523         | -    | -      | 1397         | -    | -      | 567          |       |        |              |       |
| HCM Lane V/C Ratio       | 0.26   | 0.018        | -    | -      | 0.016        | -    | -      | 0.163        |       |        |              |       |
| HCM Control Delay (s)    | 12.8   | 7.4          | 0    | -      | 7.6          | 0    | -      | 12.6         |       |        |              |       |
| HCM Lane LOS             | B      | A            | A    | -      | A            | A    | -      | B            |       |        |              |       |
| HCM 95th %tile Q(veh)    | 1      | 0.1          | -    | -      | 0            | -    | -      | 0.6          |       |        |              |       |



| Intersection             |        |       |        |       |       |        |       |      |        |       |      |      |
|--------------------------|--------|-------|--------|-------|-------|--------|-------|------|--------|-------|------|------|
| Int Delay, s/veh         | 7      |       |        |       |       |        |       |      |        |       |      |      |
| Movement                 | EBL    | EBT   | EBR    | WBL   | WBT   | WBR    | NBL   | NBT  | NBR    | SBL   | SBT  | SBR  |
| Lane Configurations      |        | ↕     |        |       | ↕     |        |       | ↕    |        |       | ↕    |      |
| Traffic Vol, veh/h       | 10     | 25    | 15     | 50    | 55    | 30     | 15    | 360  | 25     | 20    | 520  | 5    |
| Future Vol, veh/h        | 10     | 25    | 15     | 50    | 55    | 30     | 15    | 360  | 25     | 20    | 520  | 5    |
| Conflicting Peds, #/hr   | 0      | 0     | 0      | 0     | 0     | 0      | 0     | 0    | 0      | 0     | 0    | 0    |
| Sign Control             | Stop   | Stop  | Stop   | Stop  | Stop  | Stop   | Free  | Free | Free   | Free  | Free | Free |
| RT Channelized           | -      | -     | None   | -     | -     | None   | -     | -    | None   | -     | -    | None |
| Storage Length           | -      | -     | -      | -     | -     | -      | -     | -    | -      | -     | -    | -    |
| Veh in Median Storage, # | -      | 0     | -      | -     | 0     | -      | -     | 0    | -      | -     | 0    | -    |
| Grade, %                 | -      | 0     | -      | -     | 0     | -      | -     | 0    | -      | -     | 0    | -    |
| Peak Hour Factor         | 92     | 92    | 92     | 92    | 92    | 92     | 92    | 92   | 92     | 92    | 92   | 92   |
| Heavy Vehicles, %        | 2      | 2     | 2      | 2     | 2     | 2      | 2     | 2    | 2      | 2     | 2    | 2    |
| Mvmt Flow                | 11     | 27    | 16     | 54    | 60    | 33     | 16    | 391  | 27     | 22    | 565  | 5    |
|                          |        |       |        |       |       |        |       |      |        |       |      |      |
| Major/Minor              | Minor2 |       | Minor1 |       |       | Major1 |       |      | Major2 |       |      |      |
| Conflicting Flow All     | 1095   | 1062  | 568    | 1070  | 1051  | 405    | 570   | 0    | 0      | 418   | 0    | 0    |
| Stage 1                  | 612    | 612   | -      | 437   | 437   | -      | -     | -    | -      | -     | -    | -    |
| Stage 2                  | 483    | 450   | -      | 633   | 614   | -      | -     | -    | -      | -     | -    | -    |
| Critical Hdwy            | 7.12   | 6.52  | 6.22   | 7.12  | 6.52  | 6.22   | 4.12  | -    | -      | 4.12  | -    | -    |
| Critical Hdwy Stg 1      | 6.12   | 5.52  | -      | 6.12  | 5.52  | -      | -     | -    | -      | -     | -    | -    |
| Critical Hdwy Stg 2      | 6.12   | 5.52  | -      | 6.12  | 5.52  | -      | -     | -    | -      | -     | -    | -    |
| Follow-up Hdwy           | 3.518  | 4.018 | 3.318  | 3.518 | 4.018 | 3.318  | 2.218 | -    | -      | 2.218 | -    | -    |
| Pot Cap-1 Maneuver       | 191    | 223   | 522    | 199   | 227   | 646    | 1002  | -    | -      | 1141  | -    | -    |
| Stage 1                  | 480    | 484   | -      | 598   | 579   | -      | -     | -    | -      | -     | -    | -    |
| Stage 2                  | 565    | 572   | -      | 468   | 483   | -      | -     | -    | -      | -     | -    | -    |
| Platoon blocked, %       |        |       |        |       |       |        |       | -    | -      |       | -    | -    |
| Mov Cap-1 Maneuver       | 138    | 212   | 522    | 168   | 216   | 646    | 1002  | -    | -      | 1141  | -    | -    |
| Mov Cap-2 Maneuver       | 138    | 212   | -      | 168   | 216   | -      | -     | -    | -      | -     | -    | -    |
| Stage 1                  | 470    | 470   | -      | 585   | 567   | -      | -     | -    | -      | -     | -    | -    |
| Stage 2                  | 470    | 560   | -      | 415   | 469   | -      | -     | -    | -      | -     | -    | -    |
|                          |        |       |        |       |       |        |       |      |        |       |      |      |
| Approach                 | EB     |       | WB     |       |       | NB     |       |      | SB     |       |      |      |
| HCM Control Delay, s     | 25.7   |       | 46.8   |       |       | 0.3    |       |      | 0.3    |       |      |      |
| HCM LOS                  | D      |       | E      |       |       |        |       |      |        |       |      |      |
|                          |        |       |        |       |       |        |       |      |        |       |      |      |
| Minor Lane/Major Mvmt    | NBL    |       | NBT    | NBR   |       | EBLn1  | WBLn1 | SBL  | SBT    | SBR   |      |      |
| Capacity (veh/h)         | 1002   |       | -      | -     | 228   | 225    | 1141  | -    | -      |       |      |      |
| HCM Lane V/C Ratio       | 0.016  |       | -      | -     | 0.238 | 0.652  | 0.019 | -    | -      |       |      |      |
| HCM Control Delay (s)    | 8.7    |       | 0      | -     | 25.7  | 46.8   | 8.2   | 0    | -      |       |      |      |
| HCM Lane LOS             | A      |       | A      | -     | D     | E      | A     | A    | -      |       |      |      |
| HCM 95th %tile Q(veh)    | 0.1    |       | -      | -     | 0.9   | 4      | 0.1   | -    | -      |       |      |      |

| Intersection             |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|--------------------------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------|
| Int Delay, s/veh         | 0                                                                                 |        |       |                                                                                   |                                                                                   |       |
| Movement                 | EBT                                                                               | EBR    | WBL   | WBT                                                                               | NBL                                                                               | NBR   |
| Lane Configurations      |  |        |       |  |  |       |
| Traffic Vol, veh/h       | 70                                                                                | 0      | 0     | 135                                                                               | 0                                                                                 | 0     |
| Future Vol, veh/h        | 70                                                                                | 0      | 0     | 135                                                                               | 0                                                                                 | 0     |
| Conflicting Peds, #/hr   | 0                                                                                 | 0      | 0     | 0                                                                                 | 0                                                                                 | 0     |
| Sign Control             | Free                                                                              | Free   | Free  | Free                                                                              | Stop                                                                              | Stop  |
| RT Channelized           | -                                                                                 | None   | -     | None                                                                              | -                                                                                 | None  |
| Storage Length           | -                                                                                 | -      | -     | -                                                                                 | 0                                                                                 | -     |
| Veh in Median Storage, # | 0                                                                                 | -      | -     | 0                                                                                 | 0                                                                                 | -     |
| Grade, %                 | 0                                                                                 | -      | -     | 0                                                                                 | 0                                                                                 | -     |
| Peak Hour Factor         | 92                                                                                | 92     | 92    | 92                                                                                | 92                                                                                | 92    |
| Heavy Vehicles, %        | 2                                                                                 | 2      | 2     | 2                                                                                 | 2                                                                                 | 2     |
| Mvmt Flow                | 76                                                                                | 0      | 0     | 147                                                                               | 0                                                                                 | 0     |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Major/Minor              | Major1                                                                            | Major2 |       | Minor1                                                                            |                                                                                   |       |
| Conflicting Flow All     | 0                                                                                 | 0      | 76    | 0                                                                                 | 223                                                                               | 76    |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 76                                                                                | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 147                                                                               | -     |
| Critical Hdwy            | -                                                                                 | -      | 4.12  | -                                                                                 | 6.42                                                                              | 6.22  |
| Critical Hdwy Stg 1      | -                                                                                 | -      | -     | -                                                                                 | 5.42                                                                              | -     |
| Critical Hdwy Stg 2      | -                                                                                 | -      | -     | -                                                                                 | 5.42                                                                              | -     |
| Follow-up Hdwy           | -                                                                                 | -      | 2.218 | -                                                                                 | 3.518                                                                             | 3.318 |
| Pot Cap-1 Maneuver       | -                                                                                 | -      | 1523  | -                                                                                 | 765                                                                               | 985   |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 947                                                                               | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 880                                                                               | -     |
| Platoon blocked, %       | -                                                                                 | -      |       | -                                                                                 |                                                                                   |       |
| Mov Cap-1 Maneuver       | -                                                                                 | -      | 1523  | -                                                                                 | 765                                                                               | 985   |
| Mov Cap-2 Maneuver       | -                                                                                 | -      | -     | -                                                                                 | 765                                                                               | -     |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 947                                                                               | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 880                                                                               | -     |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Approach                 | EB                                                                                | WB     |       | NB                                                                                |                                                                                   |       |
| HCM Control Delay, s     | 0                                                                                 | 0      |       | 0                                                                                 |                                                                                   |       |
| HCM LOS                  |                                                                                   |        |       |                                                                                   | A                                                                                 |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Minor Lane/Major Mvmt    | NBLn1                                                                             | EBT    | EBR   | WBL                                                                               | WBT                                                                               |       |
| Capacity (veh/h)         | -                                                                                 | -      | -     | 1523                                                                              | -                                                                                 |       |
| HCM Lane V/C Ratio       | -                                                                                 | -      | -     | -                                                                                 | -                                                                                 |       |
| HCM Control Delay (s)    | 0                                                                                 | -      | -     | 0                                                                                 | -                                                                                 |       |
| HCM Lane LOS             | A                                                                                 | -      | -     | A                                                                                 | -                                                                                 |       |
| HCM 95th %tile Q(veh)    | -                                                                                 | -      | -     | 0                                                                                 | -                                                                                 |       |

| Intersection             |        |       |      |        |       |      |        |       |       |        |       |       |
|--------------------------|--------|-------|------|--------|-------|------|--------|-------|-------|--------|-------|-------|
| Int Delay, s/veh         | 8.1    |       |      |        |       |      |        |       |       |        |       |       |
| Movement                 | EBL    | EBT   | EBR  | WBL    | WBT   | WBR  | NBL    | NBT   | NBR   | SBL    | SBT   | SBR   |
| Lane Configurations      |        | ↕     |      |        | ↕     |      |        | ↕     |       |        | ↕     |       |
| Traffic Vol, veh/h       | 10     | 50    | 10   | 65     | 110   | 20   | 5      | 65    | 25    | 20     | 130   | 25    |
| Future Vol, veh/h        | 10     | 50    | 10   | 65     | 110   | 20   | 5      | 65    | 25    | 20     | 130   | 25    |
| Conflicting Peds, #/hr   | 0      | 0     | 0    | 0      | 0     | 0    | 0      | 0     | 0     | 0      | 0     | 0     |
| Sign Control             | Free   | Free  | Free | Free   | Free  | Free | Stop   | Stop  | Stop  | Stop   | Stop  | Stop  |
| RT Channelized           | -      | -     | None | -      | -     | None | -      | -     | None  | -      | -     | None  |
| Storage Length           | -      | -     | -    | -      | -     | -    | -      | -     | -     | -      | -     | -     |
| Veh in Median Storage, # | -      | 0     | -    | -      | 0     | -    | -      | 0     | -     | -      | 0     | -     |
| Grade, %                 | -      | 0     | -    | -      | 0     | -    | -      | 0     | -     | -      | 0     | -     |
| Peak Hour Factor         | 92     | 92    | 92   | 92     | 92    | 92   | 92     | 92    | 92    | 92     | 92    | 92    |
| Heavy Vehicles, %        | 2      | 2     | 2    | 2      | 2     | 2    | 2      | 2     | 2     | 2      | 2     | 2     |
| Mvmt Flow                | 11     | 54    | 11   | 71     | 120   | 22   | 5      | 71    | 27    | 22     | 141   | 27    |
|                          |        |       |      |        |       |      |        |       |       |        |       |       |
| Major/Minor              | Major1 |       |      | Major2 |       |      | Minor1 |       |       | Minor2 |       |       |
| Conflicting Flow All     | 142    | 0     | 0    | 65     | 0     | 0    | 439    | 366   | 60    | 404    | 360   | 131   |
| Stage 1                  | -      | -     | -    | -      | -     | -    | 82     | 82    | -     | 273    | 273   | -     |
| Stage 2                  | -      | -     | -    | -      | -     | -    | 357    | 284   | -     | 131    | 87    | -     |
| Critical Hdwy            | 4.12   | -     | -    | 4.12   | -     | -    | 7.12   | 6.52  | 6.22  | 7.12   | 6.52  | 6.22  |
| Critical Hdwy Stg 1      | -      | -     | -    | -      | -     | -    | 6.12   | 5.52  | -     | 6.12   | 5.52  | -     |
| Critical Hdwy Stg 2      | -      | -     | -    | -      | -     | -    | 6.12   | 5.52  | -     | 6.12   | 5.52  | -     |
| Follow-up Hdwy           | 2.218  | -     | -    | 2.218  | -     | -    | 3.518  | 4.018 | 3.318 | 3.518  | 4.018 | 3.318 |
| Pot Cap-1 Maneuver       | 1441   | -     | -    | 1537   | -     | -    | 528    | 562   | 1005  | 557    | 567   | 919   |
| Stage 1                  | -      | -     | -    | -      | -     | -    | 926    | 827   | -     | 733    | 684   | -     |
| Stage 2                  | -      | -     | -    | -      | -     | -    | 661    | 676   | -     | 873    | 823   | -     |
| Platoon blocked, %       |        | -     | -    |        | -     | -    |        |       |       |        |       |       |
| Mov Cap-1 Maneuver       | 1441   | -     | -    | 1537   | -     | -    | 391    | 529   | 1005  | 466    | 534   | 919   |
| Mov Cap-2 Maneuver       | -      | -     | -    | -      | -     | -    | 391    | 529   | -     | 466    | 534   | -     |
| Stage 1                  | -      | -     | -    | -      | -     | -    | 919    | 820   | -     | 727    | 650   | -     |
| Stage 2                  | -      | -     | -    | -      | -     | -    | 477    | 642   | -     | 770    | 816   | -     |
|                          |        |       |      |        |       |      |        |       |       |        |       |       |
| Approach                 | EB     |       |      | WB     |       |      | NB     |       |       | SB     |       |       |
| HCM Control Delay, s     | 1.1    |       |      | 2.5    |       |      | 12.4   |       |       | 14.8   |       |       |
| HCM LOS                  |        |       |      |        |       |      | B      |       |       | B      |       |       |
|                          |        |       |      |        |       |      |        |       |       |        |       |       |
| Minor Lane/Major Mvmt    | NBLn1  | EBL   | EBT  | EBR    | WBL   | WBT  | WBR    | SBLn1 |       |        |       |       |
| Capacity (veh/h)         | 592    | 1441  | -    | -      | 1537  | -    | -      | 558   |       |        |       |       |
| HCM Lane V/C Ratio       | 0.174  | 0.008 | -    | -      | 0.046 | -    | -      | 0.341 |       |        |       |       |
| HCM Control Delay (s)    | 12.4   | 7.5   | 0    | -      | 7.5   | 0    | -      | 14.8  |       |        |       |       |
| HCM Lane LOS             | B      | A     | A    | -      | A     | A    | -      | B     |       |        |       |       |
| HCM 95th %tile Q(veh)    | 0.6    | 0     | -    | -      | 0.1   | -    | -      | 1.5   |       |        |       |       |

| Intersection             |        |       |        |       |        |       |        |      |      |       |      |      |
|--------------------------|--------|-------|--------|-------|--------|-------|--------|------|------|-------|------|------|
| Int Delay, s/veh         | 3.7    |       |        |       |        |       |        |      |      |       |      |      |
| Movement                 | EBL    | EBT   | EBR    | WBL   | WBT    | WBR   | NBL    | NBT  | NBR  | SBL   | SBT  | SBR  |
| Lane Configurations      |        | ↕     |        |       | ↕      |       |        | ↕    |      |       | ↕    |      |
| Traffic Vol, veh/h       | 5      | 30    | 10     | 35    | 20     | 25    | 5      | 430  | 130  | 55    | 280  | 5    |
| Future Vol, veh/h        | 5      | 30    | 10     | 35    | 20     | 25    | 5      | 430  | 130  | 55    | 280  | 5    |
| Conflicting Peds, #/hr   | 0      | 0     | 0      | 0     | 0      | 0     | 0      | 0    | 0    | 0     | 0    | 0    |
| Sign Control             | Stop   | Stop  | Stop   | Stop  | Stop   | Stop  | Free   | Free | Free | Free  | Free | Free |
| RT Channelized           | -      | -     | None   | -     | -      | None  | -      | -    | None | -     | -    | None |
| Storage Length           | -      | -     | -      | -     | -      | -     | -      | -    | -    | -     | -    | -    |
| Veh in Median Storage, # | -      | 0     | -      | -     | 0      | -     | -      | 0    | -    | -     | 0    | -    |
| Grade, %                 | -      | 0     | -      | -     | 0      | -     | -      | 0    | -    | -     | 0    | -    |
| Peak Hour Factor         | 92     | 92    | 92     | 92    | 92     | 92    | 92     | 92   | 92   | 92    | 92   | 92   |
| Heavy Vehicles, %        | 2      | 2     | 2      | 2     | 2      | 2     | 2      | 2    | 2    | 2     | 2    | 2    |
| Mvmt Flow                | 5      | 33    | 11     | 38    | 22     | 27    | 5      | 467  | 141  | 60    | 304  | 5    |
|                          |        |       |        |       |        |       |        |      |      |       |      |      |
| Major/Minor              | Minor2 |       | Minor1 |       | Major1 |       | Major2 |      |      |       |      |      |
| Conflicting Flow All     | 999    | 1045  | 307    | 997   | 977    | 538   | 309    | 0    | 0    | 608   | 0    | 0    |
| Stage 1                  | 427    | 427   | -      | 548   | 548    | -     | -      | -    | -    | -     | -    | -    |
| Stage 2                  | 572    | 618   | -      | 449   | 429    | -     | -      | -    | -    | -     | -    | -    |
| Critical Hdwy            | 7.12   | 6.52  | 6.22   | 7.12  | 6.52   | 6.22  | 4.12   | -    | -    | 4.12  | -    | -    |
| Critical Hdwy Stg 1      | 6.12   | 5.52  | -      | 6.12  | 5.52   | -     | -      | -    | -    | -     | -    | -    |
| Critical Hdwy Stg 2      | 6.12   | 5.52  | -      | 6.12  | 5.52   | -     | -      | -    | -    | -     | -    | -    |
| Follow-up Hdwy           | 3.518  | 4.018 | 3.318  | 3.518 | 4.018  | 3.318 | 2.218  | -    | -    | 2.218 | -    | -    |
| Pot Cap-1 Maneuver       | 222    | 229   | 733    | 223   | 251    | 543   | 1252   | -    | -    | 970   | -    | -    |
| Stage 1                  | 606    | 585   | -      | 521   | 517    | -     | -      | -    | -    | -     | -    | -    |
| Stage 2                  | 505    | 481   | -      | 589   | 584    | -     | -      | -    | -    | -     | -    | -    |
| Platoon blocked, %       |        |       |        |       |        |       |        | -    | -    |       | -    | -    |
| Mov Cap-1 Maneuver       | 184    | 210   | 733    | 182   | 231    | 543   | 1252   | -    | -    | 970   | -    | -    |
| Mov Cap-2 Maneuver       | 184    | 210   | -      | 182   | 231    | -     | -      | -    | -    | -     | -    | -    |
| Stage 1                  | 602    | 541   | -      | 518   | 514    | -     | -      | -    | -    | -     | -    | -    |
| Stage 2                  | 457    | 478   | -      | 504   | 540    | -     | -      | -    | -    | -     | -    | -    |
|                          |        |       |        |       |        |       |        |      |      |       |      |      |
| Approach                 | EB     |       | WB     |       | NB     |       | SB     |      |      |       |      |      |
| HCM Control Delay, s     | 23.3   |       | 27.4   |       | 0.1    |       | 1.4    |      |      |       |      |      |
| HCM LOS                  | C      |       | D      |       |        |       |        |      |      |       |      |      |
|                          |        |       |        |       |        |       |        |      |      |       |      |      |
| Minor Lane/Major Mvmt    | NBL    | NBT   | NBR    | EBLn1 | WBLn1  | SBL   | SBT    | SBR  |      |       |      |      |
| Capacity (veh/h)         | 1252   | -     | -      | 245   | 246    | 970   | -      | -    |      |       |      |      |
| HCM Lane V/C Ratio       | 0.004  | -     | -      | 0.2   | 0.353  | 0.062 | -      | -    |      |       |      |      |
| HCM Control Delay (s)    | 7.9    | 0     | -      | 23.3  | 27.4   | 9     | 0      | -    |      |       |      |      |
| HCM Lane LOS             | A      | A     | -      | C     | D      | A     | A      | -    |      |       |      |      |
| HCM 95th %tile O(veh)    | 0      | -     | -      | 0.7   | 1.5    | 0.2   | -      | -    |      |       |      |      |

| Intersection             |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|--------------------------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------|
| Int Delay, s/veh         | 0.5                                                                               |        |       |                                                                                   |                                                                                   |       |
| Movement                 | EBT                                                                               | EBR    | WBL   | WBT                                                                               | NBL                                                                               | NBR   |
| Lane Configurations      |  |        |       |  |  |       |
| Traffic Vol, veh/h       | 180                                                                               | 30     | 20    | 80                                                                                | 0                                                                                 | 0     |
| Future Vol, veh/h        | 180                                                                               | 30     | 20    | 80                                                                                | 0                                                                                 | 0     |
| Conflicting Peds, #/hr   | 0                                                                                 | 0      | 0     | 0                                                                                 | 0                                                                                 | 0     |
| Sign Control             | Free                                                                              | Free   | Free  | Free                                                                              | Stop                                                                              | Stop  |
| RT Channelized           | -                                                                                 | None   | -     | None                                                                              | -                                                                                 | None  |
| Storage Length           | -                                                                                 | -      | -     | -                                                                                 | 0                                                                                 | -     |
| Veh in Median Storage, # | 0                                                                                 | -      | -     | 0                                                                                 | 0                                                                                 | -     |
| Grade, %                 | 0                                                                                 | -      | -     | 0                                                                                 | 0                                                                                 | -     |
| Peak Hour Factor         | 92                                                                                | 92     | 92    | 92                                                                                | 92                                                                                | 92    |
| Heavy Vehicles, %        | 2                                                                                 | 2      | 2     | 2                                                                                 | 2                                                                                 | 2     |
| Mvmt Flow                | 196                                                                               | 33     | 22    | 87                                                                                | 0                                                                                 | 0     |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Major/Minor              | Major1                                                                            | Major2 |       | Minor1                                                                            |                                                                                   |       |
| Conflicting Flow All     | 0                                                                                 | 0      | 229   | 0                                                                                 | 344                                                                               | 213   |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 213                                                                               | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 131                                                                               | -     |
| Critical Hdwy            | -                                                                                 | -      | 4.12  | -                                                                                 | 6.42                                                                              | 6.22  |
| Critical Hdwy Stg 1      | -                                                                                 | -      | -     | -                                                                                 | 5.42                                                                              | -     |
| Critical Hdwy Stg 2      | -                                                                                 | -      | -     | -                                                                                 | 5.42                                                                              | -     |
| Follow-up Hdwy           | -                                                                                 | -      | 2.218 | -                                                                                 | 3.518                                                                             | 3.318 |
| Pot Cap-1 Maneuver       | -                                                                                 | -      | 1339  | -                                                                                 | 652                                                                               | 827   |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 823                                                                               | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 895                                                                               | -     |
| Platoon blocked, %       | -                                                                                 | -      |       | -                                                                                 |                                                                                   |       |
| Mov Cap-1 Maneuver       | -                                                                                 | -      | 1339  | -                                                                                 | 641                                                                               | 827   |
| Mov Cap-2 Maneuver       | -                                                                                 | -      | -     | -                                                                                 | 641                                                                               | -     |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 809                                                                               | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 895                                                                               | -     |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Approach                 | EB                                                                                | WB     |       | NB                                                                                |                                                                                   |       |
| HCM Control Delay, s     | 0                                                                                 | 1.5    |       | 0                                                                                 |                                                                                   |       |
| HCM LOS                  | A                                                                                 |        |       |                                                                                   |                                                                                   |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Minor Lane/Major Mvmt    | NBLn1                                                                             | EBT    | EBR   | WBL                                                                               | WBT                                                                               |       |
| Capacity (veh/h)         | -                                                                                 | -      | -     | 1339                                                                              | -                                                                                 |       |
| HCM Lane V/C Ratio       | -                                                                                 | -      | -     | 0.016                                                                             | -                                                                                 |       |
| HCM Control Delay (s)    | 0                                                                                 | -      | -     | 7.7                                                                               | 0                                                                                 |       |
| HCM Lane LOS             | A                                                                                 | -      | -     | A                                                                                 | A                                                                                 |       |
| HCM 95th %tile Q(veh)    | -                                                                                 | -      | -     | 0                                                                                 | -                                                                                 |       |

HCM 2010 TWSC  
30: Graham Side Rd & Road 3E

AM Peak Hour  
2019 Total Future

| Intersection             |        |       |      |        |       |      |        |       |       |        |       |       |
|--------------------------|--------|-------|------|--------|-------|------|--------|-------|-------|--------|-------|-------|
| Int Delay, s/veh         | 6.1    |       |      |        |       |      |        |       |       |        |       |       |
| Movement                 | EBL    | EBT   | EBR  | WBL    | WBT   | WBR  | NBL    | NBT   | NBR   | SBL    | SBT   | SBR   |
| Lane Configurations      |        | ↕     |      |        | ↕     |      |        | ↕     |       |        | ↕     |       |
| Traffic Vol, veh/h       | 25     | 150   | 10   | 20     | 75    | 5    | 10     | 80    | 50    | 15     | 50    | 20    |
| Future Vol, veh/h        | 25     | 150   | 10   | 20     | 75    | 5    | 10     | 80    | 50    | 15     | 50    | 20    |
| Conflicting Peds, #/hr   | 0      | 0     | 0    | 0      | 0     | 0    | 0      | 0     | 0     | 0      | 0     | 0     |
| Sign Control             | Free   | Free  | Free | Free   | Free  | Free | Stop   | Stop  | Stop  | Stop   | Stop  | Stop  |
| RT Channelized           | -      | -     | None | -      | -     | None | -      | -     | None  | -      | -     | None  |
| Storage Length           | -      | -     | -    | -      | -     | -    | -      | -     | -     | -      | -     | -     |
| Veh in Median Storage, # | -      | 0     | -    | -      | 0     | -    | -      | 0     | -     | -      | 0     | -     |
| Grade, %                 | -      | 0     | -    | -      | 0     | -    | -      | 0     | -     | -      | 0     | -     |
| Peak Hour Factor         | 92     | 92    | 92   | 92     | 92    | 92   | 92     | 92    | 92    | 92     | 92    | 92    |
| Heavy Vehicles, %        | 2      | 2     | 2    | 2      | 2     | 2    | 2      | 2     | 2     | 2      | 2     | 2     |
| Mvmt Flow                | 27     | 163   | 11   | 22     | 82    | 5    | 11     | 87    | 54    | 16     | 54    | 22    |
|                          |        |       |      |        |       |      |        |       |       |        |       |       |
| Major/Minor              | Major1 |       |      | Major2 |       |      | Minor1 |       |       | Minor2 |       |       |
| Conflicting Flow All     | 87     | 0     | 0    | 174    | 0     | 0    | 390    | 354   | 169   | 422    | 357   | 85    |
| Stage 1                  | -      | -     | -    | -      | -     | -    | 223    | 223   | -     | 129    | 129   | -     |
| Stage 2                  | -      | -     | -    | -      | -     | -    | 167    | 131   | -     | 293    | 228   | -     |
| Critical Hdwy            | 4.12   | -     | -    | 4.12   | -     | -    | 7.12   | 6.52  | 6.22  | 7.12   | 6.52  | 6.22  |
| Critical Hdwy Stg 1      | -      | -     | -    | -      | -     | -    | 6.12   | 5.52  | -     | 6.12   | 5.52  | -     |
| Critical Hdwy Stg 2      | -      | -     | -    | -      | -     | -    | 6.12   | 5.52  | -     | 6.12   | 5.52  | -     |
| Follow-up Hdwy           | 2.218  | -     | -    | 2.218  | -     | -    | 3.518  | 4.018 | 3.318 | 3.518  | 4.018 | 3.318 |
| Pot Cap-1 Maneuver       | 1509   | -     | -    | 1403   | -     | -    | 569    | 571   | 875   | 542    | 569   | 974   |
| Stage 1                  | -      | -     | -    | -      | -     | -    | 780    | 719   | -     | 875    | 789   | -     |
| Stage 2                  | -      | -     | -    | -      | -     | -    | 835    | 788   | -     | 715    | 715   | -     |
| Platoon blocked, %       |        | -     | -    |        | -     | -    |        |       |       |        |       |       |
| Mov Cap-1 Maneuver       | 1509   | -     | -    | 1403   | -     | -    | 500    | 550   | 875   | 435    | 549   | 974   |
| Mov Cap-2 Maneuver       | -      | -     | -    | -      | -     | -    | 500    | 550   | -     | 435    | 549   | -     |
| Stage 1                  | -      | -     | -    | -      | -     | -    | 764    | 705   | -     | 858    | 776   | -     |
| Stage 2                  | -      | -     | -    | -      | -     | -    | 747    | 775   | -     | 576    | 701   | -     |
|                          |        |       |      |        |       |      |        |       |       |        |       |       |
|                          |        |       |      |        |       |      |        |       |       |        |       |       |
| Approach                 | EB     |       |      | WB     |       |      | NB     |       |       | SB     |       |       |
| HCM Control Delay, s     | 1      |       |      | 1.5    |       |      | 12.5   |       |       | 12.3   |       |       |
| HCM LOS                  |        |       |      |        |       |      | B      |       |       | B      |       |       |
|                          |        |       |      |        |       |      |        |       |       |        |       |       |
| Minor Lane/Major Mvmt    | NBLn1  | EBL   | EBT  | EBR    | WBL   | WBT  | WBR    | SBLn1 |       |        |       |       |
| Capacity (veh/h)         | 629    | 1509  | -    | -      | 1403  | -    | -      | 582   |       |        |       |       |
| HCM Lane V/C Ratio       | 0.242  | 0.018 | -    | -      | 0.015 | -    | -      | 0.159 |       |        |       |       |
| HCM Control Delay (s)    | 12.5   | 7.4   | 0    | -      | 7.6   | 0    | -      | 12.3  |       |        |       |       |
| HCM Lane LOS             | B      | A     | A    | -      | A     | A    | -      | B     |       |        |       |       |
| HCM 95th %tile Q(veh)    | 0.9    | 0.1   | -    | -      | 0     | -    | -      | 0.6   |       |        |       |       |

| Intersection             |        |              |        |       |              |        |       |              |        |       |              |      |
|--------------------------|--------|--------------|--------|-------|--------------|--------|-------|--------------|--------|-------|--------------|------|
| Int Delay, s/veh         | 7.4    |              |        |       |              |        |       |              |        |       |              |      |
| Movement                 | EBL    | EBT          | EBR    | WBL   | WBT          | WBR    | NBL   | NBT          | NBR    | SBL   | SBT          | SBR  |
| Lane Configurations      |        | <div>↕</div> |        |       | <div>↕</div> |        |       | <div>↕</div> |        |       | <div>↕</div> |      |
| Traffic Vol, veh/h       | 10     | 25           | 15     | 65    | 50           | 50     | 15    | 325          | 25     | 20    | 465          | 5    |
| Future Vol, veh/h        | 10     | 25           | 15     | 65    | 50           | 50     | 15    | 325          | 25     | 20    | 465          | 5    |
| Conflicting Peds, #/hr   | 0      | 0            | 0      | 0     | 0            | 0      | 0     | 0            | 0      | 0     | 0            | 0    |
| Sign Control             | Stop   | Stop         | Stop   | Stop  | Stop         | Stop   | Free  | Free         | Free   | Free  | Free         | Free |
| RT Channelized           | -      | -            | None   | -     | -            | None   | -     | -            | None   | -     | -            | None |
| Storage Length           | -      | -            | -      | -     | -            | -      | -     | -            | -      | -     | -            | -    |
| Veh in Median Storage, # | -      | 0            | -      | -     | 0            | -      | -     | 0            | -      | -     | 0            | -    |
| Grade, %                 | -      | 0            | -      | -     | 0            | -      | -     | 0            | -      | -     | 0            | -    |
| Peak Hour Factor         | 92     | 92           | 92     | 92    | 92           | 92     | 92    | 92           | 92     | 92    | 92           | 92   |
| Heavy Vehicles, %        | 2      | 2            | 2      | 2     | 2            | 2      | 2     | 2            | 2      | 2     | 2            | 2    |
| Mvmt Flow                | 11     | 27           | 16     | 71    | 54           | 54     | 16    | 353          | 27     | 22    | 505          | 5    |
|                          |        |              |        |       |              |        |       |              |        |       |              |      |
| Major/Minor              | Minor2 |              | Minor1 |       |              | Major1 |       |              | Major2 |       |              |      |
| Conflicting Flow All     | 1005   | 964          | 508    | 972   | 953          | 367    | 510   | 0            | 0      | 380   | 0            | 0    |
| Stage 1                  | 552    | 552          | -      | 399   | 399          | -      | -     | -            | -      | -     | -            | -    |
| Stage 2                  | 453    | 412          | -      | 573   | 554          | -      | -     | -            | -      | -     | -            | -    |
| Critical Hdwy            | 7.12   | 6.52         | 6.22   | 7.12  | 6.52         | 6.22   | 4.12  | -            | -      | 4.12  | -            | -    |
| Critical Hdwy Stg 1      | 6.12   | 5.52         | -      | 6.12  | 5.52         | -      | -     | -            | -      | -     | -            | -    |
| Critical Hdwy Stg 2      | 6.12   | 5.52         | -      | 6.12  | 5.52         | -      | -     | -            | -      | -     | -            | -    |
| Follow-up Hdwy           | 3.518  | 4.018        | 3.318  | 3.518 | 4.018        | 3.318  | 2.218 | -            | -      | 2.218 | -            | -    |
| Pot Cap-1 Maneuver       | 220    | 255          | 565    | 232   | 259          | 678    | 1055  | -            | -      | 1178  | -            | -    |
| Stage 1                  | 518    | 515          | -      | 627   | 602          | -      | -     | -            | -      | -     | -            | -    |
| Stage 2                  | 586    | 594          | -      | 505   | 514          | -      | -     | -            | -      | -     | -            | -    |
| Platoon blocked, %       |        |              |        |       |              |        |       | -            | -      |       | -            | -    |
| Mov Cap-1 Maneuver       | 163    | 244          | 565    | 199   | 247          | 678    | 1055  | -            | -      | 1178  | -            | -    |
| Mov Cap-2 Maneuver       | 163    | 244          | -      | 199   | 247          | -      | -     | -            | -      | -     | -            | -    |
| Stage 1                  | 508    | 502          | -      | 615   | 591          | -      | -     | -            | -      | -     | -            | -    |
| Stage 2                  | 480    | 583          | -      | 452   | 501          | -      | -     | -            | -      | -     | -            | -    |
|                          |        |              |        |       |              |        |       |              |        |       |              |      |
|                          |        |              |        |       |              |        |       |              |        |       |              |      |
| Approach                 | EB     |              | WB     |       |              | NB     |       |              | SB     |       |              |      |
| HCM Control Delay, s     | 22.2   |              | 40     |       |              | 0.3    |       |              | 0.3    |       |              |      |
| HCM LOS                  | C      |              | E      |       |              |        |       |              |        |       |              |      |
|                          |        |              |        |       |              |        |       |              |        |       |              |      |
| Minor Lane/Major Mvmt    | NBL    | NBT          | NBR    | EBLn1 | WBLn1        | SBL    | SBT   | SBR          |        |       |              |      |
| Capacity (veh/h)         | 1055   | -            | -      | 263   | 274          | 1178   | -     | -            |        |       |              |      |
| HCM Lane V/C Ratio       | 0.015  | -            | -      | 0.207 | 0.655        | 0.018  | -     | -            |        |       |              |      |
| HCM Control Delay (s)    | 8.5    | 0            | -      | 22.2  | 40           | 8.1    | 0     | -            |        |       |              |      |
| HCM Lane LOS             | A      | A            | -      | C     | E            | A      | A     | -            |        |       |              |      |
| HCM 95th %tile Q(veh)    | 0      | -            | -      | 0.8   | 4.2          | 0.1    | -     | -            |        |       |              |      |

| Intersection             |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|--------------------------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------|
| Int Delay, s/veh         | 1.9                                                                               |        |       |                                                                                   |                                                                                   |       |
| Movement                 | EBT                                                                               | EBR    | WBL   | WBT                                                                               | NBL                                                                               | NBR   |
| Lane Configurations      |  |        |       |  |  |       |
| Traffic Vol, veh/h       | 65                                                                                | 0      | 0     | 130                                                                               | 30                                                                                | 20    |
| Future Vol, veh/h        | 65                                                                                | 0      | 0     | 130                                                                               | 30                                                                                | 20    |
| Conflicting Peds, #/hr   | 0                                                                                 | 0      | 0     | 0                                                                                 | 0                                                                                 | 0     |
| Sign Control             | Free                                                                              | Free   | Free  | Free                                                                              | Stop                                                                              | Stop  |
| RT Channelized           | -                                                                                 | None   | -     | None                                                                              | -                                                                                 | None  |
| Storage Length           | -                                                                                 | -      | -     | -                                                                                 | 0                                                                                 | -     |
| Veh in Median Storage, # | 0                                                                                 | -      | -     | 0                                                                                 | 0                                                                                 | -     |
| Grade, %                 | 0                                                                                 | -      | -     | 0                                                                                 | 0                                                                                 | -     |
| Peak Hour Factor         | 92                                                                                | 92     | 92    | 92                                                                                | 92                                                                                | 92    |
| Heavy Vehicles, %        | 2                                                                                 | 2      | 2     | 2                                                                                 | 2                                                                                 | 2     |
| Mvmt Flow                | 71                                                                                | 0      | 0     | 141                                                                               | 33                                                                                | 22    |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Major/Minor              | Major1                                                                            | Major2 |       | Minor1                                                                            |                                                                                   |       |
| Conflicting Flow All     | 0                                                                                 | 0      | 71    | 0                                                                                 | 212                                                                               | 71    |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 71                                                                                | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 141                                                                               | -     |
| Critical Hdwy            | -                                                                                 | -      | 4.12  | -                                                                                 | 6.42                                                                              | 6.22  |
| Critical Hdwy Stg 1      | -                                                                                 | -      | -     | -                                                                                 | 5.42                                                                              | -     |
| Critical Hdwy Stg 2      | -                                                                                 | -      | -     | -                                                                                 | 5.42                                                                              | -     |
| Follow-up Hdwy           | -                                                                                 | -      | 2.218 | -                                                                                 | 3.518                                                                             | 3.318 |
| Pot Cap-1 Maneuver       | -                                                                                 | -      | 1529  | -                                                                                 | 776                                                                               | 991   |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 952                                                                               | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 886                                                                               | -     |
| Platoon blocked, %       | -                                                                                 | -      |       | -                                                                                 |                                                                                   |       |
| Mov Cap-1 Maneuver       | -                                                                                 | -      | 1529  | -                                                                                 | 776                                                                               | 991   |
| Mov Cap-2 Maneuver       | -                                                                                 | -      | -     | -                                                                                 | 776                                                                               | -     |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 952                                                                               | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 886                                                                               | -     |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Approach                 | EB                                                                                | WB     |       | NB                                                                                |                                                                                   |       |
| HCM Control Delay, s     | 0                                                                                 | 0      |       | 9.5                                                                               |                                                                                   |       |
| HCM LOS                  |                                                                                   |        |       |                                                                                   | A                                                                                 |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Minor Lane/Major Mvmt    | NBLn1                                                                             | EBT    | EBR   | WBL                                                                               | WBT                                                                               |       |
| Capacity (veh/h)         | 850                                                                               | -      | -     | 1529                                                                              | -                                                                                 |       |
| HCM Lane V/C Ratio       | 0.064                                                                             | -      | -     | -                                                                                 | -                                                                                 |       |
| HCM Control Delay (s)    | 9.5                                                                               | -      | -     | 0                                                                                 | -                                                                                 |       |
| HCM Lane LOS             | A                                                                                 | -      | -     | A                                                                                 | -                                                                                 |       |
| HCM 95th %tile Q(veh)    | 0.2                                                                               | -      | -     | 0                                                                                 | -                                                                                 |       |



HCM 2010 TWSC  
30: Graham Side Rd & Road 3E

PM Peak Hour  
2019 Total Future

| Intersection             |        |              |      |        |              |      |        |              |       |        |              |       |
|--------------------------|--------|--------------|------|--------|--------------|------|--------|--------------|-------|--------|--------------|-------|
| Int Delay, s/veh         | 7.5    |              |      |        |              |      |        |              |       |        |              |       |
| Movement                 | EBL    | EBT          | EBR  | WBL    | WBT          | WBR  | NBL    | NBT          | NBR   | SBL    | SBT          | SBR   |
| Lane Configurations      |        | <div>↕</div> |      |        | <div>↕</div> |      |        | <div>↕</div> |       |        | <div>↕</div> |       |
| Traffic Vol, veh/h       | 10     | 60           | 15   | 65     | 105          | 20   | 5      | 60           | 25    | 15     | 120          | 20    |
| Future Vol, veh/h        | 10     | 60           | 15   | 65     | 105          | 20   | 5      | 60           | 25    | 15     | 120          | 20    |
| Conflicting Peds, #/hr   | 0      | 0            | 0    | 0      | 0            | 0    | 0      | 0            | 0     | 0      | 0            | 0     |
| Sign Control             | Free   | Free         | Free | Free   | Free         | Free | Stop   | Stop         | Stop  | Stop   | Stop         | Stop  |
| RT Channelized           | -      | -            | None | -      | -            | None | -      | -            | None  | -      | -            | None  |
| Storage Length           | -      | -            | -    | -      | -            | -    | -      | -            | -     | -      | -            | -     |
| Veh in Median Storage, # | -      | 0            | -    | -      | 0            | -    | -      | 0            | -     | -      | 0            | -     |
| Grade, %                 | -      | 0            | -    | -      | 0            | -    | -      | 0            | -     | -      | 0            | -     |
| Peak Hour Factor         | 92     | 92           | 92   | 92     | 92           | 92   | 92     | 92           | 92    | 92     | 92           | 92    |
| Heavy Vehicles, %        | 2      | 2            | 2    | 2      | 2            | 2    | 2      | 2            | 2     | 2      | 2            | 2     |
| Mvmt Flow                | 11     | 65           | 16   | 71     | 114          | 22   | 5      | 65           | 27    | 16     | 130          | 22    |
|                          |        |              |      |        |              |      |        |              |       |        |              |       |
| Major/Minor              | Major1 |              |      | Major2 |              |      | Minor1 |              |       | Minor2 |              |       |
| Conflicting Flow All     | 136    | 0            | 0    | 81     | 0            | 0    | 438    | 373          | 73    | 408    | 370          | 125   |
| Stage 1                  | -      | -            | -    | -      | -            | -    | 95     | 95           | -     | 267    | 267          | -     |
| Stage 2                  | -      | -            | -    | -      | -            | -    | 343    | 278          | -     | 141    | 103          | -     |
| Critical Hdwy            | 4.12   | -            | -    | 4.12   | -            | -    | 7.12   | 6.52         | 6.22  | 7.12   | 6.52         | 6.22  |
| Critical Hdwy Stg 1      | -      | -            | -    | -      | -            | -    | 6.12   | 5.52         | -     | 6.12   | 5.52         | -     |
| Critical Hdwy Stg 2      | -      | -            | -    | -      | -            | -    | 6.12   | 5.52         | -     | 6.12   | 5.52         | -     |
| Follow-up Hdwy           | 2.218  | -            | -    | 2.218  | -            | -    | 3.518  | 4.018        | 3.318 | 3.518  | 4.018        | 3.318 |
| Pot Cap-1 Maneuver       | 1448   | -            | -    | 1517   | -            | -    | 529    | 557          | 989   | 554    | 560          | 926   |
| Stage 1                  | -      | -            | -    | -      | -            | -    | 912    | 816          | -     | 738    | 688          | -     |
| Stage 2                  | -      | -            | -    | -      | -            | -    | 672    | 680          | -     | 862    | 810          | -     |
| Platoon blocked, %       |        | -            | -    |        | -            | -    |        |              |       |        |              |       |
| Mov Cap-1 Maneuver       | 1448   | -            | -    | 1517   | -            | -    | 400    | 524          | 989   | 466    | 527          | 926   |
| Mov Cap-2 Maneuver       | -      | -            | -    | -      | -            | -    | 400    | 524          | -     | 466    | 527          | -     |
| Stage 1                  | -      | -            | -    | -      | -            | -    | 905    | 809          | -     | 732    | 653          | -     |
| Stage 2                  | -      | -            | -    | -      | -            | -    | 498    | 645          | -     | 765    | 804          | -     |
|                          |        |              |      |        |              |      |        |              |       |        |              |       |
|                          |        |              |      |        |              |      |        |              |       |        |              |       |
| Approach                 | EB     |              |      | WB     |              |      | NB     |              |       | SB     |              |       |
| HCM Control Delay, s     | 0.9    |              |      | 2.6    |              |      | 12.3   |              |       | 14.4   |              |       |
| HCM LOS                  |        |              |      |        |              |      | B      |              |       | B      |              |       |
|                          |        |              |      |        |              |      |        |              |       |        |              |       |
| Minor Lane/Major Mvmt    | NBLn1  | EBL          | EBT  | EBR    | WBL          | WBT  | WBR    | SBLn1        |       |        |              |       |
| Capacity (veh/h)         | 591    | 1448         | -    | -      | 1517         | -    | -      | 551          |       |        |              |       |
| HCM Lane V/C Ratio       | 0.166  | 0.008        | -    | -      | 0.047        | -    | -      | 0.306        |       |        |              |       |
| HCM Control Delay (s)    | 12.3   | 7.5          | 0    | -      | 7.5          | 0    | -      | 14.4         |       |        |              |       |
| HCM Lane LOS             | B      | A            | A    | -      | A            | A    | -      | B            |       |        |              |       |
| HCM 95th %tile Q(veh)    | 0.6    | 0            | -    | -      | 0.1          | -    | -      | 1.3          |       |        |              |       |

HCM 2010 TWSC  
10: Division Rd & Road 3E

AM Peak Hour  
2020 Total Future

| Intersection             |        |                                                                                   |        |       |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
|--------------------------|--------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|-------|--------|-----------------------------------------------------------------------------------|------|-------|-------------------------------------------------------------------------------------|------|
| Int Delay, s/veh         | 4      |                                                                                   |        |       |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
| Movement                 | EBL    | EBT                                                                               | EBR    | WBL   | WBT                                                                               | WBR   | NBL    | NBT                                                                               | NBR  | SBL   | SBT                                                                                 | SBR  |
| Lane Configurations      |        |  |        |       |  |       |        |  |      |       |  |      |
| Traffic Vol, veh/h       | 5      | 30                                                                                | 10     | 35    | 20                                                                                | 25    | 5      | 435                                                                               | 145  | 65    | 285                                                                                 | 5    |
| Future Vol, veh/h        | 5      | 30                                                                                | 10     | 35    | 20                                                                                | 25    | 5      | 435                                                                               | 145  | 65    | 285                                                                                 | 5    |
| Conflicting Peds, #/hr   | 0      | 0                                                                                 | 0      | 0     | 0                                                                                 | 0     | 0      | 0                                                                                 | 0    | 0     | 0                                                                                   | 0    |
| Sign Control             | Stop   | Stop                                                                              | Stop   | Stop  | Stop                                                                              | Stop  | Free   | Free                                                                              | Free | Free  | Free                                                                                | Free |
| RT Channelized           | -      | -                                                                                 | None   | -     | -                                                                                 | None  | -      | -                                                                                 | None | -     | -                                                                                   | None |
| Storage Length           | -      | -                                                                                 | -      | -     | -                                                                                 | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Veh in Median Storage, # | -      | 0                                                                                 | -      | -     | 0                                                                                 | -     | -      | 0                                                                                 | -    | -     | 0                                                                                   | -    |
| Grade, %                 | -      | 0                                                                                 | -      | -     | 0                                                                                 | -     | -      | 0                                                                                 | -    | -     | 0                                                                                   | -    |
| Peak Hour Factor         | 92     | 92                                                                                | 92     | 92    | 92                                                                                | 92    | 92     | 92                                                                                | 92   | 92    | 92                                                                                  | 92   |
| Heavy Vehicles, %        | 2      | 2                                                                                 | 2      | 2     | 2                                                                                 | 2     | 2      | 2                                                                                 | 2    | 2     | 2                                                                                   | 2    |
| Mvmt Flow                | 5      | 33                                                                                | 11     | 38    | 22                                                                                | 27    | 5      | 473                                                                               | 158  | 71    | 310                                                                                 | 5    |
|                          |        |                                                                                   |        |       |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
| Major/Minor              | Minor2 |                                                                                   | Minor1 |       | Major1                                                                            |       | Major2 |                                                                                   |      |       |                                                                                     |      |
| Conflicting Flow All     | 1042   | 1096                                                                              | 313    | 1039  | 1019                                                                              | 552   | 315    | 0                                                                                 | 0    | 631   | 0                                                                                   | 0    |
| Stage 1                  | 455    | 455                                                                               | -      | 562   | 562                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Stage 2                  | 587    | 641                                                                               | -      | 477   | 457                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Critical Hdwy            | 7.12   | 6.52                                                                              | 6.22   | 7.12  | 6.52                                                                              | 6.22  | 4.12   | -                                                                                 | -    | 4.12  | -                                                                                   | -    |
| Critical Hdwy Stg 1      | 6.12   | 5.52                                                                              | -      | 6.12  | 5.52                                                                              | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Critical Hdwy Stg 2      | 6.12   | 5.52                                                                              | -      | 6.12  | 5.52                                                                              | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Follow-up Hdwy           | 3.518  | 4.018                                                                             | 3.318  | 3.518 | 4.018                                                                             | 3.318 | 2.218  | -                                                                                 | -    | 2.218 | -                                                                                   | -    |
| Pot Cap-1 Maneuver       | 208    | 213                                                                               | 727    | 209   | 237                                                                               | 533   | 1245   | -                                                                                 | -    | 951   | -                                                                                   | -    |
| Stage 1                  | 585    | 569                                                                               | -      | 512   | 510                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Stage 2                  | 496    | 469                                                                               | -      | 569   | 568                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Platoon blocked, %       |        |                                                                                   |        |       |                                                                                   |       |        | -                                                                                 | -    |       | -                                                                                   | -    |
| Mov Cap-1 Maneuver       | 169    | 193                                                                               | 727    | 166   | 214                                                                               | 533   | 1245   | -                                                                                 | -    | 951   | -                                                                                   | -    |
| Mov Cap-2 Maneuver       | 169    | 193                                                                               | -      | 166   | 214                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Stage 1                  | 581    | 517                                                                               | -      | 509   | 507                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Stage 2                  | 448    | 466                                                                               | -      | 477   | 516                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
|                          |        |                                                                                   |        |       |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
| Approach                 | EB     |                                                                                   | WB     |       | NB                                                                                |       | SB     |                                                                                   |      |       |                                                                                     |      |
| HCM Control Delay, s     | 25.3   |                                                                                   | 30.2   |       | 0.1                                                                               |       | 1.7    |                                                                                   |      |       |                                                                                     |      |
| HCM LOS                  | D      |                                                                                   | D      |       |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
|                          |        |                                                                                   |        |       |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
| Minor Lane/Major Mvmt    | NBL    | NBT                                                                               | NBR    | EBLn1 | WBLn1                                                                             | SBL   | SBT    | SBR                                                                               |      |       |                                                                                     |      |
| Capacity (veh/h)         | 1245   | -                                                                                 | -      | 226   | 228                                                                               | 951   | -      | -                                                                                 |      |       |                                                                                     |      |
| HCM Lane V/C Ratio       | 0.004  | -                                                                                 | -      | 0.216 | 0.381                                                                             | 0.074 | -      | -                                                                                 |      |       |                                                                                     |      |
| HCM Control Delay (s)    | 7.9    | 0                                                                                 | -      | 25.3  | 30.2                                                                              | 9.1   | 0      | -                                                                                 |      |       |                                                                                     |      |
| HCM Lane LOS             | A      | A                                                                                 | -      | D     | D                                                                                 | A     | A      | -                                                                                 |      |       |                                                                                     |      |
| HCM 95th %tile Q(veh)    | 0      | -                                                                                 | -      | 0.8   | 1.7                                                                               | 0.2   | -      | -                                                                                 |      |       |                                                                                     |      |

| Intersection             |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|--------------------------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------|
| Int Delay, s/veh         | 0.8                                                                               |        |       |                                                                                   |                                                                                   |       |
| Movement                 | EBT                                                                               | EBR    | WBL   | WBT                                                                               | NBL                                                                               | NBR   |
| Lane Configurations      |  |        |       |  |  |       |
| Traffic Vol, veh/h       | 180                                                                               | 55     | 35    | 85                                                                                | 0                                                                                 | 0     |
| Future Vol, veh/h        | 180                                                                               | 55     | 35    | 85                                                                                | 0                                                                                 | 0     |
| Conflicting Peds, #/hr   | 0                                                                                 | 0      | 0     | 0                                                                                 | 0                                                                                 | 0     |
| Sign Control             | Free                                                                              | Free   | Free  | Free                                                                              | Stop                                                                              | Stop  |
| RT Channelized           | -                                                                                 | None   | -     | None                                                                              | -                                                                                 | None  |
| Storage Length           | -                                                                                 | -      | -     | -                                                                                 | 0                                                                                 | -     |
| Veh in Median Storage, # | 0                                                                                 | -      | -     | 0                                                                                 | 0                                                                                 | -     |
| Grade, %                 | 0                                                                                 | -      | -     | 0                                                                                 | 0                                                                                 | -     |
| Peak Hour Factor         | 92                                                                                | 92     | 92    | 92                                                                                | 92                                                                                | 92    |
| Heavy Vehicles, %        | 2                                                                                 | 2      | 2     | 2                                                                                 | 2                                                                                 | 2     |
| Mvmt Flow                | 196                                                                               | 60     | 38    | 92                                                                                | 0                                                                                 | 0     |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Major/Minor              | Major1                                                                            | Major2 |       | Minor1                                                                            |                                                                                   |       |
| Conflicting Flow All     | 0                                                                                 | 0      | 256   | 0                                                                                 | 394                                                                               | 226   |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 226                                                                               | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 168                                                                               | -     |
| Critical Hdwy            | -                                                                                 | -      | 4.12  | -                                                                                 | 6.42                                                                              | 6.22  |
| Critical Hdwy Stg 1      | -                                                                                 | -      | -     | -                                                                                 | 5.42                                                                              | -     |
| Critical Hdwy Stg 2      | -                                                                                 | -      | -     | -                                                                                 | 5.42                                                                              | -     |
| Follow-up Hdwy           | -                                                                                 | -      | 2.218 | -                                                                                 | 3.518                                                                             | 3.318 |
| Pot Cap-1 Maneuver       | -                                                                                 | -      | 1309  | -                                                                                 | 611                                                                               | 813   |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 812                                                                               | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 862                                                                               | -     |
| Platoon blocked, %       | -                                                                                 | -      |       | -                                                                                 |                                                                                   |       |
| Mov Cap-1 Maneuver       | -                                                                                 | -      | 1309  | -                                                                                 | 592                                                                               | 813   |
| Mov Cap-2 Maneuver       | -                                                                                 | -      | -     | -                                                                                 | 592                                                                               | -     |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 787                                                                               | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 862                                                                               | -     |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Approach                 | EB                                                                                | WB     |       | NB                                                                                |                                                                                   |       |
| HCM Control Delay, s     | 0                                                                                 | 2.3    |       | 0                                                                                 |                                                                                   |       |
| HCM LOS                  | A                                                                                 |        |       |                                                                                   |                                                                                   |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|                          |                                                                                   |        |       |                                                                                   |                                                                                   |       |
| Minor Lane/Major Mvmt    | NBLn1                                                                             | EBT    | EBR   | WBL                                                                               | WBT                                                                               |       |
| Capacity (veh/h)         | -                                                                                 | -      | -     | 1309                                                                              | -                                                                                 |       |
| HCM Lane V/C Ratio       | -                                                                                 | -      | -     | 0.029                                                                             | -                                                                                 |       |
| HCM Control Delay (s)    | 0                                                                                 | -      | -     | 7.8                                                                               | 0                                                                                 |       |
| HCM Lane LOS             | A                                                                                 | -      | -     | A                                                                                 | A                                                                                 |       |
| HCM 95th %tile Q(veh)    | -                                                                                 | -      | -     | 0.1                                                                               | -                                                                                 |       |

HCM 2010 TWSC  
30: Graham Side Rd & Road 3E

AM Peak Hour  
2020 Total Future

| Intersection             |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
|--------------------------|--------|-----------------------------------------------------------------------------------|------|--------|-----------------------------------------------------------------------------------|------|--------|-----------------------------------------------------------------------------------|-------|--------|-------------------------------------------------------------------------------------|-------|
| Int Delay, s/veh         | 6.2    |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
| Movement                 | EBL    | EBT                                                                               | EBR  | WBL    | WBT                                                                               | WBR  | NBL    | NBT                                                                               | NBR   | SBL    | SBT                                                                                 | SBR   |
| Lane Configurations      |        |  |      |        |  |      |        |  |       |        |  |       |
| Traffic Vol, veh/h       | 25     | 150                                                                               | 10   | 20     | 85                                                                                | 5    | 10     | 85                                                                                | 50    | 15     | 50                                                                                  | 20    |
| Future Vol, veh/h        | 25     | 150                                                                               | 10   | 20     | 85                                                                                | 5    | 10     | 85                                                                                | 50    | 15     | 50                                                                                  | 20    |
| Conflicting Peds, #/hr   | 0      | 0                                                                                 | 0    | 0      | 0                                                                                 | 0    | 0      | 0                                                                                 | 0     | 0      | 0                                                                                   | 0     |
| Sign Control             | Free   | Free                                                                              | Free | Free   | Free                                                                              | Free | Stop   | Stop                                                                              | Stop  | Stop   | Stop                                                                                | Stop  |
| RT Channelized           | -      | -                                                                                 | None | -      | -                                                                                 | None | -      | -                                                                                 | None  | -      | -                                                                                   | None  |
| Storage Length           | -      | -                                                                                 | -    | -      | -                                                                                 | -    | -      | -                                                                                 | -     | -      | -                                                                                   | -     |
| Veh in Median Storage, # | -      | 0                                                                                 | -    | -      | 0                                                                                 | -    | -      | 0                                                                                 | -     | -      | 0                                                                                   | -     |
| Grade, %                 | -      | 0                                                                                 | -    | -      | 0                                                                                 | -    | -      | 0                                                                                 | -     | -      | 0                                                                                   | -     |
| Peak Hour Factor         | 92     | 92                                                                                | 92   | 92     | 92                                                                                | 92   | 92     | 92                                                                                | 92    | 92     | 92                                                                                  | 92    |
| Heavy Vehicles, %        | 2      | 2                                                                                 | 2    | 2      | 2                                                                                 | 2    | 2      | 2                                                                                 | 2     | 2      | 2                                                                                   | 2     |
| Mvmt Flow                | 27     | 163                                                                               | 11   | 22     | 92                                                                                | 5    | 11     | 92                                                                                | 54    | 16     | 54                                                                                  | 22    |
|                          |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
| Major/Minor              | Major1 |                                                                                   |      | Major2 |                                                                                   |      | Minor1 |                                                                                   |       | Minor2 |                                                                                     |       |
| Conflicting Flow All     | 97     | 0                                                                                 | 0    | 174    | 0                                                                                 | 0    | 400    | 364                                                                               | 169   | 435    | 367                                                                                 | 95    |
| Stage 1                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 223    | 223                                                                               | -     | 139    | 139                                                                                 | -     |
| Stage 2                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 177    | 141                                                                               | -     | 296    | 228                                                                                 | -     |
| Critical Hdwy            | 4.12   | -                                                                                 | -    | 4.12   | -                                                                                 | -    | 7.12   | 6.52                                                                              | 6.22  | 7.12   | 6.52                                                                                | 6.22  |
| Critical Hdwy Stg 1      | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 6.12   | 5.52                                                                              | -     | 6.12   | 5.52                                                                                | -     |
| Critical Hdwy Stg 2      | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 6.12   | 5.52                                                                              | -     | 6.12   | 5.52                                                                                | -     |
| Follow-up Hdwy           | 2.218  | -                                                                                 | -    | 2.218  | -                                                                                 | -    | 3.518  | 4.018                                                                             | 3.318 | 3.518  | 4.018                                                                               | 3.318 |
| Pot Cap-1 Maneuver       | 1496   | -                                                                                 | -    | 1403   | -                                                                                 | -    | 560    | 564                                                                               | 875   | 531    | 562                                                                                 | 962   |
| Stage 1                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 780    | 719                                                                               | -     | 864    | 782                                                                                 | -     |
| Stage 2                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 825    | 780                                                                               | -     | 712    | 715                                                                                 | -     |
| Platoon blocked, %       |        | -                                                                                 | -    |        | -                                                                                 | -    |        |                                                                                   |       |        |                                                                                     |       |
| Mov Cap-1 Maneuver       | 1496   | -                                                                                 | -    | 1403   | -                                                                                 | -    | 491    | 543                                                                               | 875   | 421    | 541                                                                                 | 962   |
| Mov Cap-2 Maneuver       | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 491    | 543                                                                               | -     | 421    | 541                                                                                 | -     |
| Stage 1                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 764    | 705                                                                               | -     | 847    | 769                                                                                 | -     |
| Stage 2                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 737    | 767                                                                               | -     | 569    | 701                                                                                 | -     |
|                          |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
| Approach                 | EB     |                                                                                   |      | WB     |                                                                                   |      | NB     |                                                                                   |       | SB     |                                                                                     |       |
| HCM Control Delay, s     | 1      |                                                                                   |      | 1.4    |                                                                                   |      | 12.8   |                                                                                   |       | 12.5   |                                                                                     |       |
| HCM LOS                  |        |                                                                                   |      |        |                                                                                   |      | B      |                                                                                   |       | B      |                                                                                     |       |
|                          |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
| Minor Lane/Major Mvmt    | NBLn1  | EBL                                                                               | EBT  | EBR    | WBL                                                                               | WBT  | WBR    | SBLn1                                                                             |       |        |                                                                                     |       |
| Capacity (veh/h)         | 620    | 1496                                                                              | -    | -      | 1403                                                                              | -    | -      | 571                                                                               |       |        |                                                                                     |       |
| HCM Lane V/C Ratio       | 0.254  | 0.018                                                                             | -    | -      | 0.015                                                                             | -    | -      | 0.162                                                                             |       |        |                                                                                     |       |
| HCM Control Delay (s)    | 12.8   | 7.5                                                                               | 0    | -      | 7.6                                                                               | 0    | -      | 12.5                                                                              |       |        |                                                                                     |       |
| HCM Lane LOS             | B      | A                                                                                 | A    | -      | A                                                                                 | A    | -      | B                                                                                 |       |        |                                                                                     |       |
| HCM 95th %tile Q(veh)    | 1      | 0.1                                                                               | -    | -      | 0                                                                                 | -    | -      | 0.6                                                                               |       |        |                                                                                     |       |

| Intersection             |        |       |        |       |       |        |       |      |        |       |      |      |
|--------------------------|--------|-------|--------|-------|-------|--------|-------|------|--------|-------|------|------|
| Int Delay, s/veh         | 10.2   |       |        |       |       |        |       |      |        |       |      |      |
| Movement                 | EBL    | EBT   | EBR    | WBL   | WBT   | WBR    | NBL   | NBT  | NBR    | SBL   | SBT  | SBR  |
| Lane Configurations      |        | ↕     |        |       | ↕     |        |       | ↕    |        |       | ↕    |      |
| Traffic Vol, veh/h       | 10     | 25    | 15     | 80    | 50    | 60     | 15    | 330  | 25     | 20    | 475  | 5    |
| Future Vol, veh/h        | 10     | 25    | 15     | 80    | 50    | 60     | 15    | 330  | 25     | 20    | 475  | 5    |
| Conflicting Peds, #/hr   | 0      | 0     | 0      | 0     | 0     | 0      | 0     | 0    | 0      | 0     | 0    | 0    |
| Sign Control             | Stop   | Stop  | Stop   | Stop  | Stop  | Stop   | Free  | Free | Free   | Free  | Free | Free |
| RT Channelized           | -      | -     | None   | -     | -     | None   | -     | -    | None   | -     | -    | None |
| Storage Length           | -      | -     | -      | -     | -     | -      | -     | -    | -      | -     | -    | -    |
| Veh in Median Storage, # | -      | 0     | -      | -     | 0     | -      | -     | 0    | -      | -     | 0    | -    |
| Grade, %                 | -      | 0     | -      | -     | 0     | -      | -     | 0    | -      | -     | 0    | -    |
| Peak Hour Factor         | 92     | 92    | 92     | 92    | 92    | 92     | 92    | 92   | 92     | 92    | 92   | 92   |
| Heavy Vehicles, %        | 2      | 2     | 2      | 2     | 2     | 2      | 2     | 2    | 2      | 2     | 2    | 2    |
| Mvmt Flow                | 11     | 27    | 16     | 87    | 54    | 65     | 16    | 359  | 27     | 22    | 516  | 5    |
|                          |        |       |        |       |       |        |       |      |        |       |      |      |
| Major/Minor              | Minor2 |       | Minor1 |       |       | Major1 |       |      | Major2 |       |      |      |
| Conflicting Flow All     | 1027   | 981   | 519    | 989   | 970   | 373    | 521   | 0    | 0      | 386   | 0    | 0    |
| Stage 1                  | 563    | 563   | -      | 405   | 405   | -      | -     | -    | -      | -     | -    | -    |
| Stage 2                  | 464    | 418   | -      | 584   | 565   | -      | -     | -    | -      | -     | -    | -    |
| Critical Hdwy            | 7.12   | 6.52  | 6.22   | 7.12  | 6.52  | 6.22   | 4.12  | -    | -      | 4.12  | -    | -    |
| Critical Hdwy Stg 1      | 6.12   | 5.52  | -      | 6.12  | 5.52  | -      | -     | -    | -      | -     | -    | -    |
| Critical Hdwy Stg 2      | 6.12   | 5.52  | -      | 6.12  | 5.52  | -      | -     | -    | -      | -     | -    | -    |
| Follow-up Hdwy           | 3.518  | 4.018 | 3.318  | 3.518 | 4.018 | 3.318  | 2.218 | -    | -      | 2.218 | -    | -    |
| Pot Cap-1 Maneuver       | 213    | 249   | 557    | 226   | 253   | 673    | 1045  | -    | -      | 1172  | -    | -    |
| Stage 1                  | 511    | 509   | -      | 622   | 598   | -      | -     | -    | -      | -     | -    | -    |
| Stage 2                  | 578    | 591   | -      | 498   | 508   | -      | -     | -    | -      | -     | -    | -    |
| Platoon blocked, %       |        |       |        |       |       |        |       | -    | -      |       | -    | -    |
| Mov Cap-1 Maneuver       | 154    | 238   | 557    | 193   | 242   | 673    | 1045  | -    | -      | 1172  | -    | -    |
| Mov Cap-2 Maneuver       | 154    | 238   | -      | 193   | 242   | -      | -     | -    | -      | -     | -    | -    |
| Stage 1                  | 501    | 496   | -      | 610   | 586   | -      | -     | -    | -      | -     | -    | -    |
| Stage 2                  | 464    | 579   | -      | 445   | 495   | -      | -     | -    | -      | -     | -    | -    |
|                          |        |       |        |       |       |        |       |      |        |       |      |      |
| Approach                 | EB     |       | WB     |       |       | NB     |       |      | SB     |       |      |      |
| HCM Control Delay, s     | 23     |       | 52.4   |       |       | 0.3    |       |      | 0.3    |       |      |      |
| HCM LOS                  | C      |       | F      |       |       |        |       |      |        |       |      |      |
|                          |        |       |        |       |       |        |       |      |        |       |      |      |
| Minor Lane/Major Mvmt    | NBL    | NBT   | NBR    | EBLn1 | WBLn1 | SBL    | SBT   | SBR  |        |       |      |      |
| Capacity (veh/h)         | 1045   | -     | -      | 254   | 268   | 1172   | -     | -    |        |       |      |      |
| HCM Lane V/C Ratio       | 0.016  | -     | -      | 0.214 | 0.771 | 0.019  | -     | -    |        |       |      |      |
| HCM Control Delay (s)    | 8.5    | 0     | -      | 23    | 52.4  | 8.1    | 0     | -    |        |       |      |      |
| HCM Lane LOS             | A      | A     | -      | C     | F     | A      | A     | -    |        |       |      |      |
| HCM 95th %tile Q(veh)    | 0      | -     | -      | 0.8   | 5.8   | 0.1    | -     | -    |        |       |      |      |

| Intersection             |                                                                                   |        |       |                                                                                   |       |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|-------|-----------------------------------------------------------------------------------|
| Int Delay, s/veh         | 3                                                                                 |        |       |                                                                                   |       |                                                                                   |
| Movement                 | EBT                                                                               | EBR    | WBL   | WBT                                                                               | NBL   | NBR                                                                               |
| Lane Configurations      |  |        |       |  |       |  |
| Traffic Vol, veh/h       | 70                                                                                | 0      | 0     | 130                                                                               | 55    | 35                                                                                |
| Future Vol, veh/h        | 70                                                                                | 0      | 0     | 130                                                                               | 55    | 35                                                                                |
| Conflicting Peds, #/hr   | 0                                                                                 | 0      | 0     | 0                                                                                 | 0     | 0                                                                                 |
| Sign Control             | Free                                                                              | Free   | Free  | Free                                                                              | Stop  | Stop                                                                              |
| RT Channelized           | -                                                                                 | None   | -     | None                                                                              | -     | None                                                                              |
| Storage Length           | -                                                                                 | -      | -     | -                                                                                 | 0     | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -      | -     | 0                                                                                 | 0     | -                                                                                 |
| Grade, %                 | 0                                                                                 | -      | -     | 0                                                                                 | 0     | -                                                                                 |
| Peak Hour Factor         | 92                                                                                | 92     | 92    | 92                                                                                | 92    | 92                                                                                |
| Heavy Vehicles, %        | 2                                                                                 | 2      | 2     | 2                                                                                 | 2     | 2                                                                                 |
| Mvmt Flow                | 76                                                                                | 0      | 0     | 141                                                                               | 60    | 38                                                                                |
|                          |                                                                                   |        |       |                                                                                   |       |                                                                                   |
| Major/Minor              | Major1                                                                            | Major2 |       | Minor1                                                                            |       |                                                                                   |
| Conflicting Flow All     | 0                                                                                 | 0      | 76    | 0                                                                                 | 217   | 76                                                                                |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 76    | -                                                                                 |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 141   | -                                                                                 |
| Critical Hdwy            | -                                                                                 | -      | 4.12  | -                                                                                 | 6.42  | 6.22                                                                              |
| Critical Hdwy Stg 1      | -                                                                                 | -      | -     | -                                                                                 | 5.42  | -                                                                                 |
| Critical Hdwy Stg 2      | -                                                                                 | -      | -     | -                                                                                 | 5.42  | -                                                                                 |
| Follow-up Hdwy           | -                                                                                 | -      | 2.218 | -                                                                                 | 3.518 | 3.318                                                                             |
| Pot Cap-1 Maneuver       | -                                                                                 | -      | 1523  | -                                                                                 | 771   | 985                                                                               |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 947   | -                                                                                 |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 886   | -                                                                                 |
| Platoon blocked, %       | -                                                                                 | -      |       | -                                                                                 |       |                                                                                   |
| Mov Cap-1 Maneuver       | -                                                                                 | -      | 1523  | -                                                                                 | 771   | 985                                                                               |
| Mov Cap-2 Maneuver       | -                                                                                 | -      | -     | -                                                                                 | 771   | -                                                                                 |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 947   | -                                                                                 |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 886   | -                                                                                 |
|                          |                                                                                   |        |       |                                                                                   |       |                                                                                   |
|                          |                                                                                   |        |       |                                                                                   |       |                                                                                   |
| Approach                 | EB                                                                                | WB     |       | NB                                                                                |       |                                                                                   |
| HCM Control Delay, s     | 0                                                                                 | 0      |       | 9.8                                                                               |       |                                                                                   |
| HCM LOS                  | A                                                                                 |        |       |                                                                                   |       |                                                                                   |
|                          |                                                                                   |        |       |                                                                                   |       |                                                                                   |
|                          |                                                                                   |        |       |                                                                                   |       |                                                                                   |
| Minor Lane/Major Mvmt    | NBLn1                                                                             | EBT    | EBR   | WBL                                                                               | WBT   |                                                                                   |
| Capacity (veh/h)         | 842                                                                               | -      | -     | 1523                                                                              | -     |                                                                                   |
| HCM Lane V/C Ratio       | 0.116                                                                             | -      | -     | -                                                                                 | -     |                                                                                   |
| HCM Control Delay (s)    | 9.8                                                                               | -      | -     | 0                                                                                 | -     |                                                                                   |
| HCM Lane LOS             | A                                                                                 | -      | -     | A                                                                                 | -     |                                                                                   |
| HCM 95th %tile Q(veh)    | 0.4                                                                               | -      | -     | 0                                                                                 | -     |                                                                                   |

| Intersection             |        |       |      |        |       |      |        |       |       |        |       |       |
|--------------------------|--------|-------|------|--------|-------|------|--------|-------|-------|--------|-------|-------|
| Int Delay, s/veh         | 7.5    |       |      |        |       |      |        |       |       |        |       |       |
| Movement                 | EBL    | EBT   | EBR  | WBL    | WBT   | WBR  | NBL    | NBT   | NBR   | SBL    | SBT   | SBR   |
| Lane Configurations      |        | ↕     |      |        | ↕     |      |        | ↕     |       |        | ↕     |       |
| Traffic Vol, veh/h       | 15     | 70    | 15   | 65     | 105   | 20   | 5      | 60    | 25    | 15     | 120   | 20    |
| Future Vol, veh/h        | 15     | 70    | 15   | 65     | 105   | 20   | 5      | 60    | 25    | 15     | 120   | 20    |
| Conflicting Peds, #/hr   | 0      | 0     | 0    | 0      | 0     | 0    | 0      | 0     | 0     | 0      | 0     | 0     |
| Sign Control             | Free   | Free  | Free | Free   | Free  | Free | Stop   | Stop  | Stop  | Stop   | Stop  | Stop  |
| RT Channelized           | -      | -     | None | -      | -     | None | -      | -     | None  | -      | -     | None  |
| Storage Length           | -      | -     | -    | -      | -     | -    | -      | -     | -     | -      | -     | -     |
| Veh in Median Storage, # | -      | 0     | -    | -      | 0     | -    | -      | 0     | -     | -      | 0     | -     |
| Grade, %                 | -      | 0     | -    | -      | 0     | -    | -      | 0     | -     | -      | 0     | -     |
| Peak Hour Factor         | 92     | 92    | 92   | 92     | 92    | 92   | 92     | 92    | 92    | 92     | 92    | 92    |
| Heavy Vehicles, %        | 2      | 2     | 2    | 2      | 2     | 2    | 2      | 2     | 2     | 2      | 2     | 2     |
| Mvmt Flow                | 16     | 76    | 16   | 71     | 114   | 22   | 5      | 65    | 27    | 16     | 130   | 22    |
|                          |        |       |      |        |       |      |        |       |       |        |       |       |
| Major/Minor              | Major1 |       |      | Major2 |       |      | Minor1 |       |       | Minor2 |       |       |
| Conflicting Flow All     | 136    | 0     | 0    | 92     | 0     | 0    | 459    | 394   | 84    | 429    | 391   | 125   |
| Stage 1                  | -      | -     | -    | -      | -     | -    | 116    | 116   | -     | 267    | 267   | -     |
| Stage 2                  | -      | -     | -    | -      | -     | -    | 343    | 278   | -     | 162    | 124   | -     |
| Critical Hdwy            | 4.12   | -     | -    | 4.12   | -     | -    | 7.12   | 6.52  | 6.22  | 7.12   | 6.52  | 6.22  |
| Critical Hdwy Stg 1      | -      | -     | -    | -      | -     | -    | 6.12   | 5.52  | -     | 6.12   | 5.52  | -     |
| Critical Hdwy Stg 2      | -      | -     | -    | -      | -     | -    | 6.12   | 5.52  | -     | 6.12   | 5.52  | -     |
| Follow-up Hdwy           | 2.218  | -     | -    | 2.218  | -     | -    | 3.518  | 4.018 | 3.318 | 3.518  | 4.018 | 3.318 |
| Pot Cap-1 Maneuver       | 1448   | -     | -    | 1503   | -     | -    | 512    | 542   | 975   | 536    | 545   | 926   |
| Stage 1                  | -      | -     | -    | -      | -     | -    | 889    | 800   | -     | 738    | 688   | -     |
| Stage 2                  | -      | -     | -    | -      | -     | -    | 672    | 680   | -     | 840    | 793   | -     |
| Platoon blocked, %       |        | -     | -    |        | -     | -    |        |       |       |        |       |       |
| Mov Cap-1 Maneuver       | 1448   | -     | -    | 1503   | -     | -    | 383    | 508   | 975   | 448    | 511   | 926   |
| Mov Cap-2 Maneuver       | -      | -     | -    | -      | -     | -    | 383    | 508   | -     | 448    | 511   | -     |
| Stage 1                  | -      | -     | -    | -      | -     | -    | 878    | 790   | -     | 729    | 653   | -     |
| Stage 2                  | -      | -     | -    | -      | -     | -    | 498    | 645   | -     | 740    | 783   | -     |
|                          |        |       |      |        |       |      |        |       |       |        |       |       |
|                          |        |       |      |        |       |      |        |       |       |        |       |       |
| Approach                 | EB     |       |      | WB     |       |      | NB     |       |       | SB     |       |       |
| HCM Control Delay, s     | 1.1    |       |      | 2.6    |       |      | 12.6   |       |       | 14.8   |       |       |
| HCM LOS                  |        |       |      |        |       |      | B      |       |       | B      |       |       |
|                          |        |       |      |        |       |      |        |       |       |        |       |       |
| Minor Lane/Major Mvmt    | NBLn1  | EBL   | EBT  | EBR    | WBL   | WBT  | WBR    | SBLn1 |       |        |       |       |
| Capacity (veh/h)         | 574    | 1448  | -    | -      | 1503  | -    | -      | 535   |       |        |       |       |
| HCM Lane V/C Ratio       | 0.17   | 0.011 | -    | -      | 0.047 | -    | -      | 0.315 |       |        |       |       |
| HCM Control Delay (s)    | 12.6   | 7.5   | 0    | -      | 7.5   | 0    | -      | 14.8  |       |        |       |       |
| HCM Lane LOS             | B      | A     | A    | -      | A     | A    | -      | B     |       |        |       |       |
| HCM 95th %tile Q(veh)    | 0.6    | 0     | -    | -      | 0.1   | -    | -      | 1.3   |       |        |       |       |

| Intersection             |        |                                                                                   |        |       |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
|--------------------------|--------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|-------|--------|-----------------------------------------------------------------------------------|------|-------|-------------------------------------------------------------------------------------|------|
| Int Delay, s/veh         | 4.4    |                                                                                   |        |       |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
| Movement                 | EBL    | EBT                                                                               | EBR    | WBL   | WBT                                                                               | WBR   | NBL    | NBT                                                                               | NBR  | SBL   | SBT                                                                                 | SBR  |
| Lane Configurations      |        |  |        |       |  |       |        |  |      |       |  |      |
| Traffic Vol, veh/h       | 5      | 30                                                                                | 10     | 35    | 20                                                                                | 30    | 5      | 440                                                                               | 155  | 80    | 290                                                                                 | 5    |
| Future Vol, veh/h        | 5      | 30                                                                                | 10     | 35    | 20                                                                                | 30    | 5      | 440                                                                               | 155  | 80    | 290                                                                                 | 5    |
| Conflicting Peds, #/hr   | 0      | 0                                                                                 | 0      | 0     | 0                                                                                 | 0     | 0      | 0                                                                                 | 0    | 0     | 0                                                                                   | 0    |
| Sign Control             | Stop   | Stop                                                                              | Stop   | Stop  | Stop                                                                              | Stop  | Free   | Free                                                                              | Free | Free  | Free                                                                                | Free |
| RT Channelized           | -      | -                                                                                 | None   | -     | -                                                                                 | None  | -      | -                                                                                 | None | -     | -                                                                                   | None |
| Storage Length           | -      | -                                                                                 | -      | -     | -                                                                                 | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Veh in Median Storage, # | -      | 0                                                                                 | -      | -     | 0                                                                                 | -     | -      | 0                                                                                 | -    | -     | 0                                                                                   | -    |
| Grade, %                 | -      | 0                                                                                 | -      | -     | 0                                                                                 | -     | -      | 0                                                                                 | -    | -     | 0                                                                                   | -    |
| Peak Hour Factor         | 92     | 92                                                                                | 92     | 92    | 92                                                                                | 92    | 92     | 92                                                                                | 92   | 92    | 92                                                                                  | 92   |
| Heavy Vehicles, %        | 2      | 2                                                                                 | 2      | 2     | 2                                                                                 | 2     | 2      | 2                                                                                 | 2    | 2     | 2                                                                                   | 2    |
| Mvmt Flow                | 5      | 33                                                                                | 11     | 38    | 22                                                                                | 33    | 5      | 478                                                                               | 168  | 87    | 315                                                                                 | 5    |
|                          |        |                                                                                   |        |       |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
| Major/Minor              | Minor2 |                                                                                   | Minor1 |       | Major1                                                                            |       | Major2 |                                                                                   |      |       |                                                                                     |      |
| Conflicting Flow All     | 1092   | 1148                                                                              | 318    | 1086  | 1066                                                                              | 562   | 320    | 0                                                                                 | 0    | 646   | 0                                                                                   | 0    |
| Stage 1                  | 492    | 492                                                                               | -      | 572   | 572                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Stage 2                  | 600    | 656                                                                               | -      | 514   | 494                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Critical Hdwy            | 7.12   | 6.52                                                                              | 6.22   | 7.12  | 6.52                                                                              | 6.22  | 4.12   | -                                                                                 | -    | 4.12  | -                                                                                   | -    |
| Critical Hdwy Stg 1      | 6.12   | 5.52                                                                              | -      | 6.12  | 5.52                                                                              | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Critical Hdwy Stg 2      | 6.12   | 5.52                                                                              | -      | 6.12  | 5.52                                                                              | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Follow-up Hdwy           | 3.518  | 4.018                                                                             | 3.318  | 3.518 | 4.018                                                                             | 3.318 | 2.218  | -                                                                                 | -    | 2.218 | -                                                                                   | -    |
| Pot Cap-1 Maneuver       | 192    | 199                                                                               | 723    | 194   | 222                                                                               | 526   | 1240   | -                                                                                 | -    | 939   | -                                                                                   | -    |
| Stage 1                  | 558    | 548                                                                               | -      | 505   | 504                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Stage 2                  | 488    | 462                                                                               | -      | 543   | 546                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Platoon blocked, %       |        |                                                                                   |        |       |                                                                                   |       |        | -                                                                                 | -    |       | -                                                                                   | -    |
| Mov Cap-1 Maneuver       | 150    | 176                                                                               | 723    | 149   | 196                                                                               | 526   | 1240   | -                                                                                 | -    | 939   | -                                                                                   | -    |
| Mov Cap-2 Maneuver       | 150    | 176                                                                               | -      | 149   | 196                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Stage 1                  | 555    | 486                                                                               | -      | 502   | 501                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
| Stage 2                  | 435    | 459                                                                               | -      | 443   | 484                                                                               | -     | -      | -                                                                                 | -    | -     | -                                                                                   | -    |
|                          |        |                                                                                   |        |       |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
| Approach                 | EB     |                                                                                   | WB     |       | NB                                                                                |       | SB     |                                                                                   |      |       |                                                                                     |      |
| HCM Control Delay, s     | 27.7   |                                                                                   | 33.6   |       | 0.1                                                                               |       | 2      |                                                                                   |      |       |                                                                                     |      |
| HCM LOS                  | D      |                                                                                   | D      |       |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
|                          |        |                                                                                   |        |       |                                                                                   |       |        |                                                                                   |      |       |                                                                                     |      |
| Minor Lane/Major Mvmt    | NBL    | NBT                                                                               | NBR    | EBLn1 | WBLn1                                                                             | SBL   | SBT    | SBR                                                                               |      |       |                                                                                     |      |
| Capacity (veh/h)         | 1240   | -                                                                                 | -      | 207   | 216                                                                               | 939   | -      | -                                                                                 |      |       |                                                                                     |      |
| HCM Lane V/C Ratio       | 0.004  | -                                                                                 | -      | 0.236 | 0.428                                                                             | 0.093 | -      | -                                                                                 |      |       |                                                                                     |      |
| HCM Control Delay (s)    | 7.9    | 0                                                                                 | -      | 27.7  | 33.6                                                                              | 9.2   | 0      | -                                                                                 |      |       |                                                                                     |      |
| HCM Lane LOS             | A      | A                                                                                 | -      | D     | D                                                                                 | A     | A      | -                                                                                 |      |       |                                                                                     |      |
| HCM 95th %tile Q(veh)    | 0      | -                                                                                 | -      | 0.9   | 2                                                                                 | 0.3   | -      | -                                                                                 |      |       |                                                                                     |      |



| Intersection             |                                                                                   |        |       |                                                                                                                                                                     |                                                                                                                                                                     |       |
|--------------------------|-----------------------------------------------------------------------------------|--------|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| Int Delay, s/veh         | 1                                                                                 |        |       |                                                                                                                                                                     |                                                                                                                                                                     |       |
| Movement                 | EBT                                                                               | EBR    | WBL   | WBT                                                                                                                                                                 | NBL                                                                                                                                                                 | NBR   |
| Lane Configurations      |  |        |       |   |   |       |
| Traffic Vol, veh/h       | 185                                                                               | 80     | 50    | 85                                                                                                                                                                  | 0                                                                                                                                                                   | 0     |
| Future Vol, veh/h        | 185                                                                               | 80     | 50    | 85                                                                                                                                                                  | 0                                                                                                                                                                   | 0     |
| Conflicting Peds, #/hr   | 0                                                                                 | 0      | 0     | 0                                                                                                                                                                   | 0                                                                                                                                                                   | 0     |
| Sign Control             | Free                                                                              | Free   | Free  | Free                                                                                                                                                                | Stop                                                                                                                                                                | Stop  |
| RT Channelized           | -                                                                                 | None   | -     | None                                                                                                                                                                | -                                                                                                                                                                   | None  |
| Storage Length           | -                                                                                 | -      | -     | -                                                                                                                                                                   | 0                                                                                                                                                                   | -     |
| Veh in Median Storage, # | 0                                                                                 | -      | -     | 0                                                                                                                                                                   | 0                                                                                                                                                                   | -     |
| Grade, %                 | 0                                                                                 | -      | -     | 0                                                                                                                                                                   | 0                                                                                                                                                                   | -     |
| Peak Hour Factor         | 92                                                                                | 92     | 92    | 92                                                                                                                                                                  | 92                                                                                                                                                                  | 92    |
| Heavy Vehicles, %        | 2                                                                                 | 2      | 2     | 2                                                                                                                                                                   | 2                                                                                                                                                                   | 2     |
| Mvmt Flow                | 201                                                                               | 87     | 54    | 92                                                                                                                                                                  | 0                                                                                                                                                                   | 0     |
|                          |                                                                                   |        |       |                                                                                                                                                                     |                                                                                                                                                                     |       |
| Major/Minor              | Major1                                                                            | Major2 |       | Minor1                                                                                                                                                              |                                                                                                                                                                     |       |
| Conflicting Flow All     | 0                                                                                 | 0      | 288   | 0                                                                                                                                                                   | 445                                                                                                                                                                 | 245   |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                                                                                                   | 245                                                                                                                                                                 | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                                                                                                   | 200                                                                                                                                                                 | -     |
| Critical Hdwy            | -                                                                                 | -      | 4.12  | -                                                                                                                                                                   | 6.42                                                                                                                                                                | 6.22  |
| Critical Hdwy Stg 1      | -                                                                                 | -      | -     | -                                                                                                                                                                   | 5.42                                                                                                                                                                | -     |
| Critical Hdwy Stg 2      | -                                                                                 | -      | -     | -                                                                                                                                                                   | 5.42                                                                                                                                                                | -     |
| Follow-up Hdwy           | -                                                                                 | -      | 2.218 | -                                                                                                                                                                   | 3.518                                                                                                                                                               | 3.318 |
| Pot Cap-1 Maneuver       | -                                                                                 | -      | 1274  | -                                                                                                                                                                   | 571                                                                                                                                                                 | 794   |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                                                                                                   | 796                                                                                                                                                                 | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                                                                                                   | 834                                                                                                                                                                 | -     |
| Platoon blocked, %       | -                                                                                 | -      |       | -                                                                                                                                                                   |                                                                                                                                                                     |       |
| Mov Cap-1 Maneuver       | -                                                                                 | -      | 1274  | -                                                                                                                                                                   | 545                                                                                                                                                                 | 794   |
| Mov Cap-2 Maneuver       | -                                                                                 | -      | -     | -                                                                                                                                                                   | 545                                                                                                                                                                 | -     |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                                                                                                   | 760                                                                                                                                                                 | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                                                                                                   | 834                                                                                                                                                                 | -     |
|                          |                                                                                   |        |       |                                                                                                                                                                     |                                                                                                                                                                     |       |
| Approach                 | EB                                                                                | WB     |       | NB                                                                                                                                                                  |                                                                                                                                                                     |       |
| HCM Control Delay, s     | 0                                                                                 | 2.9    |       | 0                                                                                                                                                                   |                                                                                                                                                                     |       |
| HCM LOS                  | A                                                                                 |        |       |                                                                                                                                                                     |                                                                                                                                                                     |       |
|                          |                                                                                   |        |       |                                                                                                                                                                     |                                                                                                                                                                     |       |
| Minor Lane/Major Mvmt    | NBLn1                                                                             | EBT    | EBR   | WBL                                                                                                                                                                 | WBT                                                                                                                                                                 |       |
| Capacity (veh/h)         | -                                                                                 | -      | -     | 1274                                                                                                                                                                | -                                                                                                                                                                   |       |
| HCM Lane V/C Ratio       | -                                                                                 | -      | -     | 0.043                                                                                                                                                               | -                                                                                                                                                                   |       |
| HCM Control Delay (s)    | 0                                                                                 | -      | -     | 8                                                                                                                                                                   | 0                                                                                                                                                                   |       |
| HCM Lane LOS             | A                                                                                 | -      | -     | A                                                                                                                                                                   | A                                                                                                                                                                   |       |
| HCM 95th %tile Q(veh)    | -                                                                                 | -      | -     | 0.1                                                                                                                                                                 | -                                                                                                                                                                   |       |

| Intersection             |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
|--------------------------|--------|-----------------------------------------------------------------------------------|------|--------|-----------------------------------------------------------------------------------|------|--------|-----------------------------------------------------------------------------------|-------|--------|-------------------------------------------------------------------------------------|-------|
| Int Delay, s/veh         | 6.3    |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
| Movement                 | EBL    | EBT                                                                               | EBR  | WBL    | WBT                                                                               | WBR  | NBL    | NBT                                                                               | NBR   | SBL    | SBT                                                                                 | SBR   |
| Lane Configurations      |        |  |      |        |  |      |        |  |       |        |  |       |
| Traffic Vol, veh/h       | 25     | 155                                                                               | 10   | 20     | 95                                                                                | 5    | 15     | 85                                                                                | 50    | 15     | 55                                                                                  | 20    |
| Future Vol, veh/h        | 25     | 155                                                                               | 10   | 20     | 95                                                                                | 5    | 15     | 85                                                                                | 50    | 15     | 55                                                                                  | 20    |
| Conflicting Peds, #/hr   | 0      | 0                                                                                 | 0    | 0      | 0                                                                                 | 0    | 0      | 0                                                                                 | 0     | 0      | 0                                                                                   | 0     |
| Sign Control             | Free   | Free                                                                              | Free | Free   | Free                                                                              | Free | Stop   | Stop                                                                              | Stop  | Stop   | Stop                                                                                | Stop  |
| RT Channelized           | -      | -                                                                                 | None | -      | -                                                                                 | None | -      | -                                                                                 | None  | -      | -                                                                                   | None  |
| Storage Length           | -      | -                                                                                 | -    | -      | -                                                                                 | -    | -      | -                                                                                 | -     | -      | -                                                                                   | -     |
| Veh in Median Storage, # | -      | 0                                                                                 | -    | -      | 0                                                                                 | -    | -      | 0                                                                                 | -     | -      | 0                                                                                   | -     |
| Grade, %                 | -      | 0                                                                                 | -    | -      | 0                                                                                 | -    | -      | 0                                                                                 | -     | -      | 0                                                                                   | -     |
| Peak Hour Factor         | 92     | 92                                                                                | 92   | 92     | 92                                                                                | 92   | 92     | 92                                                                                | 92    | 92     | 92                                                                                  | 92    |
| Heavy Vehicles, %        | 2      | 2                                                                                 | 2    | 2      | 2                                                                                 | 2    | 2      | 2                                                                                 | 2     | 2      | 2                                                                                   | 2     |
| Mvmt Flow                | 27     | 168                                                                               | 11   | 22     | 103                                                                               | 5    | 16     | 92                                                                                | 54    | 16     | 60                                                                                  | 22    |
|                          |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
| Major/Minor              | Major1 |                                                                                   |      | Major2 |                                                                                   |      | Minor1 |                                                                                   |       | Minor2 |                                                                                     |       |
| Conflicting Flow All     | 108    | 0                                                                                 | 0    | 179    | 0                                                                                 | 0    | 419    | 380                                                                               | 174   | 451    | 383                                                                                 | 106   |
| Stage 1                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 228    | 228                                                                               | -     | 150    | 150                                                                                 | -     |
| Stage 2                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 191    | 152                                                                               | -     | 301    | 233                                                                                 | -     |
| Critical Hdwy            | 4.12   | -                                                                                 | -    | 4.12   | -                                                                                 | -    | 7.12   | 6.52                                                                              | 6.22  | 7.12   | 6.52                                                                                | 6.22  |
| Critical Hdwy Stg 1      | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 6.12   | 5.52                                                                              | -     | 6.12   | 5.52                                                                                | -     |
| Critical Hdwy Stg 2      | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 6.12   | 5.52                                                                              | -     | 6.12   | 5.52                                                                                | -     |
| Follow-up Hdwy           | 2.218  | -                                                                                 | -    | 2.218  | -                                                                                 | -    | 3.518  | 4.018                                                                             | 3.318 | 3.518  | 4.018                                                                               | 3.318 |
| Pot Cap-1 Maneuver       | 1483   | -                                                                                 | -    | 1397   | -                                                                                 | -    | 544    | 552                                                                               | 869   | 519    | 550                                                                                 | 948   |
| Stage 1                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 775    | 715                                                                               | -     | 853    | 773                                                                                 | -     |
| Stage 2                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 811    | 772                                                                               | -     | 708    | 712                                                                                 | -     |
| Platoon blocked, %       |        | -                                                                                 | -    |        | -                                                                                 | -    |        |                                                                                   |       |        |                                                                                     |       |
| Mov Cap-1 Maneuver       | 1483   | -                                                                                 | -    | 1397   | -                                                                                 | -    | 472    | 532                                                                               | 869   | 410    | 530                                                                                 | 948   |
| Mov Cap-2 Maneuver       | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 472    | 532                                                                               | -     | 410    | 530                                                                                 | -     |
| Stage 1                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 760    | 701                                                                               | -     | 836    | 760                                                                                 | -     |
| Stage 2                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 718    | 759                                                                               | -     | 565    | 698                                                                                 | -     |
|                          |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
| Approach                 | EB     |                                                                                   |      | WB     |                                                                                   |      | NB     |                                                                                   |       | SB     |                                                                                     |       |
| HCM Control Delay, s     | 1      |                                                                                   |      | 1.3    |                                                                                   |      | 13.2   |                                                                                   |       | 12.8   |                                                                                     |       |
| HCM LOS                  |        |                                                                                   |      |        |                                                                                   |      | B      |                                                                                   |       | B      |                                                                                     |       |
|                          |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
| Minor Lane/Major Mvmt    | NBLn1  | EBL                                                                               | EBT  | EBR    | WBL                                                                               | WBT  | WBR    | SBLn1                                                                             |       |        |                                                                                     |       |
| Capacity (veh/h)         | 602    | 1483                                                                              | -    | -      | 1397                                                                              | -    | -      | 557                                                                               |       |        |                                                                                     |       |
| HCM Lane V/C Ratio       | 0.271  | 0.018                                                                             | -    | -      | 0.016                                                                             | -    | -      | 0.176                                                                             |       |        |                                                                                     |       |
| HCM Control Delay (s)    | 13.2   | 7.5                                                                               | 0    | -      | 7.6                                                                               | 0    | -      | 12.8                                                                              |       |        |                                                                                     |       |
| HCM Lane LOS             | B      | A                                                                                 | A    | -      | A                                                                                 | A    | -      | B                                                                                 |       |        |                                                                                     |       |
| HCM 95th %tile Q(veh)    | 1.1    | 0.1                                                                               | -    | -      | 0                                                                                 | -    | -      | 0.6                                                                               |       |        |                                                                                     |       |

| Intersection             |        |                                                                                   |        |       |                                                                                   |        |       |                                                                                   |        |       |                                                                                     |      |
|--------------------------|--------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|--------|-------|-------------------------------------------------------------------------------------|------|
| Int Delay, s/veh         | 13.1   |                                                                                   |        |       |                                                                                   |        |       |                                                                                   |        |       |                                                                                     |      |
| Movement                 | EBL    | EBT                                                                               | EBR    | WBL   | WBT                                                                               | WBR    | NBL   | NBT                                                                               | NBR    | SBL   | SBT                                                                                 | SBR  |
| Lane Configurations      |        |  |        |       |  |        |       |  |        |       |  |      |
| Traffic Vol, veh/h       | 10     | 25                                                                                | 15     | 90    | 50                                                                                | 70     | 15    | 330                                                                               | 25     | 20    | 480                                                                                 | 5    |
| Future Vol, veh/h        | 10     | 25                                                                                | 15     | 90    | 50                                                                                | 70     | 15    | 330                                                                               | 25     | 20    | 480                                                                                 | 5    |
| Conflicting Peds, #/hr   | 0      | 0                                                                                 | 0      | 0     | 0                                                                                 | 0      | 0     | 0                                                                                 | 0      | 0     | 0                                                                                   | 0    |
| Sign Control             | Stop   | Stop                                                                              | Stop   | Stop  | Stop                                                                              | Stop   | Free  | Free                                                                              | Free   | Free  | Free                                                                                | Free |
| RT Channelized           | -      | -                                                                                 | None   | -     | -                                                                                 | None   | -     | -                                                                                 | None   | -     | -                                                                                   | None |
| Storage Length           | -      | -                                                                                 | -      | -     | -                                                                                 | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Veh in Median Storage, # | -      | 0                                                                                 | -      | -     | 0                                                                                 | -      | -     | 0                                                                                 | -      | -     | 0                                                                                   | -    |
| Grade, %                 | -      | 0                                                                                 | -      | -     | 0                                                                                 | -      | -     | 0                                                                                 | -      | -     | 0                                                                                   | -    |
| Peak Hour Factor         | 92     | 92                                                                                | 92     | 92    | 92                                                                                | 92     | 92    | 92                                                                                | 92     | 92    | 92                                                                                  | 92   |
| Heavy Vehicles, %        | 2      | 2                                                                                 | 2      | 2     | 2                                                                                 | 2      | 2     | 2                                                                                 | 2      | 2     | 2                                                                                   | 2    |
| Mvmt Flow                | 11     | 27                                                                                | 16     | 98    | 54                                                                                | 76     | 16    | 359                                                                               | 27     | 22    | 522                                                                                 | 5    |
|                          |        |                                                                                   |        |       |                                                                                   |        |       |                                                                                   |        |       |                                                                                     |      |
| Major/Minor              | Minor2 |                                                                                   | Minor1 |       |                                                                                   | Major1 |       |                                                                                   | Major2 |       |                                                                                     |      |
| Conflicting Flow All     | 1039   | 987                                                                               | 525    | 995   | 976                                                                               | 373    | 527   | 0                                                                                 | 0      | 386   | 0                                                                                   | 0    |
| Stage 1                  | 569    | 569                                                                               | -      | 405   | 405                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Stage 2                  | 470    | 418                                                                               | -      | 590   | 571                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Critical Hdwy            | 7.12   | 6.52                                                                              | 6.22   | 7.12  | 6.52                                                                              | 6.22   | 4.12  | -                                                                                 | -      | 4.12  | -                                                                                   | -    |
| Critical Hdwy Stg 1      | 6.12   | 5.52                                                                              | -      | 6.12  | 5.52                                                                              | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Critical Hdwy Stg 2      | 6.12   | 5.52                                                                              | -      | 6.12  | 5.52                                                                              | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Follow-up Hdwy           | 3.518  | 4.018                                                                             | 3.318  | 3.518 | 4.018                                                                             | 3.318  | 2.218 | -                                                                                 | -      | 2.218 | -                                                                                   | -    |
| Pot Cap-1 Maneuver       | 209    | 247                                                                               | 552    | 224   | 251                                                                               | 673    | 1040  | -                                                                                 | -      | 1172  | -                                                                                   | -    |
| Stage 1                  | 507    | 506                                                                               | -      | 622   | 598                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Stage 2                  | 574    | 591                                                                               | -      | 494   | 505                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Platoon blocked, %       |        |                                                                                   |        |       |                                                                                   |        |       | -                                                                                 | -      |       | -                                                                                   | -    |
| Mov Cap-1 Maneuver       | 148    | 236                                                                               | 552    | 191   | 239                                                                               | 673    | 1040  | -                                                                                 | -      | 1172  | -                                                                                   | -    |
| Mov Cap-2 Maneuver       | 148    | 236                                                                               | -      | 191   | 239                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Stage 1                  | 497    | 492                                                                               | -      | 610   | 586                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Stage 2                  | 453    | 579                                                                               | -      | 441   | 491                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
|                          |        |                                                                                   |        |       |                                                                                   |        |       |                                                                                   |        |       |                                                                                     |      |
|                          |        |                                                                                   |        |       |                                                                                   |        |       |                                                                                   |        |       |                                                                                     |      |
| Approach                 | EB     |                                                                                   | WB     |       |                                                                                   | NB     |       |                                                                                   | SB     |       |                                                                                     |      |
| HCM Control Delay, s     | 23.4   |                                                                                   | 64.2   |       |                                                                                   | 0.3    |       |                                                                                   | 0.3    |       |                                                                                     |      |
| HCM LOS                  | C      |                                                                                   | F      |       |                                                                                   |        |       |                                                                                   |        |       |                                                                                     |      |
|                          |        |                                                                                   |        |       |                                                                                   |        |       |                                                                                   |        |       |                                                                                     |      |
| Minor Lane/Major Mvmt    | NBL    | NBT                                                                               | NBR    | EBLn1 | WBLn1                                                                             | SBL    | SBT   | SBR                                                                               |        |       |                                                                                     |      |
| Capacity (veh/h)         | 1040   | -                                                                                 | -      | 249   | 268                                                                               | 1172   | -     | -                                                                                 |        |       |                                                                                     |      |
| HCM Lane V/C Ratio       | 0.016  | -                                                                                 | -      | 0.218 | 0.852                                                                             | 0.019  | -     | -                                                                                 |        |       |                                                                                     |      |
| HCM Control Delay (s)    | 8.5    | 0                                                                                 | -      | 23.4  | 64.2                                                                              | 8.1    | 0     | -                                                                                 |        |       |                                                                                     |      |
| HCM Lane LOS             | A      | A                                                                                 | -      | C     | F                                                                                 | A      | A     | -                                                                                 |        |       |                                                                                     |      |
| HCM 95th %tile Q(veh)    | 0      | -                                                                                 | -      | 0.8   | 7.1                                                                               | 0.1    | -     | -                                                                                 |        |       |                                                                                     |      |

| Intersection             |                                                                                   |        |       |                                                                                   |       |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|-------|-----------------------------------------------------------------------------------|
| Int Delay, s/veh         | 4                                                                                 |        |       |                                                                                   |       |                                                                                   |
| Movement                 | EBT                                                                               | EBR    | WBL   | WBT                                                                               | NBL   | NBR                                                                               |
| Lane Configurations      |  |        |       |  |       |  |
| Traffic Vol, veh/h       | 70                                                                                | 0      | 0     | 135                                                                               | 80    | 50                                                                                |
| Future Vol, veh/h        | 70                                                                                | 0      | 0     | 135                                                                               | 80    | 50                                                                                |
| Conflicting Peds, #/hr   | 0                                                                                 | 0      | 0     | 0                                                                                 | 0     | 0                                                                                 |
| Sign Control             | Free                                                                              | Free   | Free  | Free                                                                              | Stop  | Stop                                                                              |
| RT Channelized           | -                                                                                 | None   | -     | None                                                                              | -     | None                                                                              |
| Storage Length           | -                                                                                 | -      | -     | -                                                                                 | 0     | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -      | -     | 0                                                                                 | 0     | -                                                                                 |
| Grade, %                 | 0                                                                                 | -      | -     | 0                                                                                 | 0     | -                                                                                 |
| Peak Hour Factor         | 92                                                                                | 92     | 92    | 92                                                                                | 92    | 92                                                                                |
| Heavy Vehicles, %        | 2                                                                                 | 2      | 2     | 2                                                                                 | 2     | 2                                                                                 |
| Mvmt Flow                | 76                                                                                | 0      | 0     | 147                                                                               | 87    | 54                                                                                |
|                          |                                                                                   |        |       |                                                                                   |       |                                                                                   |
| Major/Minor              | Major1                                                                            | Major2 |       | Minor1                                                                            |       |                                                                                   |
| Conflicting Flow All     | 0                                                                                 | 0      | 76    | 0                                                                                 | 223   | 76                                                                                |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 76    | -                                                                                 |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 147   | -                                                                                 |
| Critical Hdwy            | -                                                                                 | -      | 4.12  | -                                                                                 | 6.42  | 6.22                                                                              |
| Critical Hdwy Stg 1      | -                                                                                 | -      | -     | -                                                                                 | 5.42  | -                                                                                 |
| Critical Hdwy Stg 2      | -                                                                                 | -      | -     | -                                                                                 | 5.42  | -                                                                                 |
| Follow-up Hdwy           | -                                                                                 | -      | 2.218 | -                                                                                 | 3.518 | 3.318                                                                             |
| Pot Cap-1 Maneuver       | -                                                                                 | -      | 1523  | -                                                                                 | 765   | 985                                                                               |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 947   | -                                                                                 |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 880   | -                                                                                 |
| Platoon blocked, %       | -                                                                                 | -      |       | -                                                                                 |       |                                                                                   |
| Mov Cap-1 Maneuver       | -                                                                                 | -      | 1523  | -                                                                                 | 765   | 985                                                                               |
| Mov Cap-2 Maneuver       | -                                                                                 | -      | -     | -                                                                                 | 765   | -                                                                                 |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 947   | -                                                                                 |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 880   | -                                                                                 |
|                          |                                                                                   |        |       |                                                                                   |       |                                                                                   |
| Approach                 | EB                                                                                | WB     |       | NB                                                                                |       |                                                                                   |
| HCM Control Delay, s     | 0                                                                                 | 0      |       | 10.2                                                                              |       |                                                                                   |
| HCM LOS                  | B                                                                                 |        |       |                                                                                   |       |                                                                                   |
|                          |                                                                                   |        |       |                                                                                   |       |                                                                                   |
| Minor Lane/Major Mvmt    | NBLn1                                                                             | EBT    | EBR   | WBL                                                                               | WBT   |                                                                                   |
| Capacity (veh/h)         | 837                                                                               | -      | -     | 1523                                                                              | -     |                                                                                   |
| HCM Lane V/C Ratio       | 0.169                                                                             | -      | -     | -                                                                                 | -     |                                                                                   |
| HCM Control Delay (s)    | 10.2                                                                              | -      | -     | 0                                                                                 | -     |                                                                                   |
| HCM Lane LOS             | B                                                                                 | -      | -     | A                                                                                 | -     |                                                                                   |
| HCM 95th %tile Q(veh)    | 0.6                                                                               | -      | -     | 0                                                                                 | -     |                                                                                   |

| Intersection             |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
|--------------------------|--------|-----------------------------------------------------------------------------------|------|--------|-----------------------------------------------------------------------------------|------|--------|-----------------------------------------------------------------------------------|-------|--------|-------------------------------------------------------------------------------------|-------|
| Int Delay, s/veh         | 7.5    |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
| Movement                 | EBL    | EBT                                                                               | EBR  | WBL    | WBT                                                                               | WBR  | NBL    | NBT                                                                               | NBR   | SBL    | SBT                                                                                 | SBR   |
| Lane Configurations      |        |  |      |        |  |      |        |  |       |        |  |       |
| Traffic Vol, veh/h       | 15     | 80                                                                                | 20   | 65     | 105                                                                               | 20   | 5      | 65                                                                                | 25    | 15     | 120                                                                                 | 20    |
| Future Vol, veh/h        | 15     | 80                                                                                | 20   | 65     | 105                                                                               | 20   | 5      | 65                                                                                | 25    | 15     | 120                                                                                 | 20    |
| Conflicting Peds, #/hr   | 0      | 0                                                                                 | 0    | 0      | 0                                                                                 | 0    | 0      | 0                                                                                 | 0     | 0      | 0                                                                                   | 0     |
| Sign Control             | Free   | Free                                                                              | Free | Free   | Free                                                                              | Free | Stop   | Stop                                                                              | Stop  | Stop   | Stop                                                                                | Stop  |
| RT Channelized           | -      | -                                                                                 | None | -      | -                                                                                 | None | -      | -                                                                                 | None  | -      | -                                                                                   | None  |
| Storage Length           | -      | -                                                                                 | -    | -      | -                                                                                 | -    | -      | -                                                                                 | -     | -      | -                                                                                   | -     |
| Veh in Median Storage, # | -      | 0                                                                                 | -    | -      | 0                                                                                 | -    | -      | 0                                                                                 | -     | -      | 0                                                                                   | -     |
| Grade, %                 | -      | 0                                                                                 | -    | -      | 0                                                                                 | -    | -      | 0                                                                                 | -     | -      | 0                                                                                   | -     |
| Peak Hour Factor         | 92     | 92                                                                                | 92   | 92     | 92                                                                                | 92   | 92     | 92                                                                                | 92    | 92     | 92                                                                                  | 92    |
| Heavy Vehicles, %        | 2      | 2                                                                                 | 2    | 2      | 2                                                                                 | 2    | 2      | 2                                                                                 | 2     | 2      | 2                                                                                   | 2     |
| Mvmt Flow                | 16     | 87                                                                                | 22   | 71     | 114                                                                               | 22   | 5      | 71                                                                                | 27    | 16     | 130                                                                                 | 22    |
|                          |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
| Major/Minor              | Major1 |                                                                                   |      | Major2 |                                                                                   |      | Minor1 |                                                                                   |       | Minor2 |                                                                                     |       |
| Conflicting Flow All     | 136    | 0                                                                                 | 0    | 109    | 0                                                                                 | 0    | 473    | 408                                                                               | 98    | 446    | 408                                                                                 | 125   |
| Stage 1                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 130    | 130                                                                               | -     | 267    | 267                                                                                 | -     |
| Stage 2                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 343    | 278                                                                               | -     | 179    | 141                                                                                 | -     |
| Critical Hdwy            | 4.12   | -                                                                                 | -    | 4.12   | -                                                                                 | -    | 7.12   | 6.52                                                                              | 6.22  | 7.12   | 6.52                                                                                | 6.22  |
| Critical Hdwy Stg 1      | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 6.12   | 5.52                                                                              | -     | 6.12   | 5.52                                                                                | -     |
| Critical Hdwy Stg 2      | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 6.12   | 5.52                                                                              | -     | 6.12   | 5.52                                                                                | -     |
| Follow-up Hdwy           | 2.218  | -                                                                                 | -    | 2.218  | -                                                                                 | -    | 3.518  | 4.018                                                                             | 3.318 | 3.518  | 4.018                                                                               | 3.318 |
| Pot Cap-1 Maneuver       | 1448   | -                                                                                 | -    | 1481   | -                                                                                 | -    | 501    | 533                                                                               | 958   | 523    | 533                                                                                 | 926   |
| Stage 1                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 874    | 789                                                                               | -     | 738    | 688                                                                                 | -     |
| Stage 2                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 672    | 680                                                                               | -     | 823    | 780                                                                                 | -     |
| Platoon blocked, %       |        | -                                                                                 | -    |        | -                                                                                 | -    |        |                                                                                   |       |        |                                                                                     |       |
| Mov Cap-1 Maneuver       | 1448   | -                                                                                 | -    | 1481   | -                                                                                 | -    | 372    | 499                                                                               | 958   | 431    | 499                                                                                 | 926   |
| Mov Cap-2 Maneuver       | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 372    | 499                                                                               | -     | 431    | 499                                                                                 | -     |
| Stage 1                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 864    | 780                                                                               | -     | 729    | 652                                                                                 | -     |
| Stage 2                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 498    | 645                                                                               | -     | 718    | 771                                                                                 | -     |
|                          |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
| Approach                 | EB     |                                                                                   |      | WB     |                                                                                   |      | NB     |                                                                                   |       | SB     |                                                                                     |       |
| HCM Control Delay, s     | 1      |                                                                                   |      | 2.6    |                                                                                   |      | 12.9   |                                                                                   |       | 15.1   |                                                                                     |       |
| HCM LOS                  |        |                                                                                   |      |        |                                                                                   |      | B      |                                                                                   |       | C      |                                                                                     |       |
|                          |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
| Minor Lane/Major Mvmt    | NBLn1  | EBL                                                                               | EBT  | EBR    | WBL                                                                               | WBT  | WBR    | SBLn1                                                                             |       |        |                                                                                     |       |
| Capacity (veh/h)         | 559    | 1448                                                                              | -    | -      | 1481                                                                              | -    | -      | 522                                                                               |       |        |                                                                                     |       |
| HCM Lane V/C Ratio       | 0.185  | 0.011                                                                             | -    | -      | 0.048                                                                             | -    | -      | 0.323                                                                             |       |        |                                                                                     |       |
| HCM Control Delay (s)    | 12.9   | 7.5                                                                               | 0    | -      | 7.6                                                                               | 0    | -      | 15.1                                                                              |       |        |                                                                                     |       |
| HCM Lane LOS             | B      | A                                                                                 | A    | -      | A                                                                                 | A    | -      | C                                                                                 |       |        |                                                                                     |       |
| HCM 95th %tile Q(veh)    | 0.7    | 0                                                                                 | -    | -      | 0.1                                                                               | -    | -      | 1.4                                                                               |       |        |                                                                                     |       |

HCM 2010 TWSC  
10: Division Rd & Road 3E

AM Peak Hour  
2022 Total Future

| Intersection             |        |       |        |            |        |       |        |      |      |       |      |      |
|--------------------------|--------|-------|--------|------------|--------|-------|--------|------|------|-------|------|------|
| Int Delay, s/veh         | 4.8    |       |        |            |        |       |        |      |      |       |      |      |
| Movement                 | EBL    | EBT   | EBR    | WBL        | WBT    | WBR   | NBL    | NBT  | NBR  | SBL   | SBT  | SBR  |
| Lane Configurations      |        | ↕     |        |            | ↕      |       |        | ↕    |      |       | ↕    |      |
| Traffic Vol, veh/h       | 5      | 30    | 10     | 35         | 20     | 30    | 5      | 450  | 165  | 90    | 295  | 5    |
| Future Vol, veh/h        | 5      | 30    | 10     | 35         | 20     | 30    | 5      | 450  | 165  | 90    | 295  | 5    |
| Conflicting Peds, #/hr   | 0      | 0     | 0      | 0          | 0      | 0     | 0      | 0    | 0    | 0     | 0    | 0    |
| Sign Control             | Stop   | Stop  | Stop   | Stop       | Stop   | Stop  | Free   | Free | Free | Free  | Free | Free |
| RT Channelized           | -      | -     | None   | -          | -      | None  | -      | -    | None | -     | -    | None |
| Storage Length           | -      | -     | -      | -          | -      | -     | -      | -    | -    | -     | -    | -    |
| Veh in Median Storage, # | -      | 0     | -      | -          | 0      | -     | -      | 0    | -    | -     | 0    | -    |
| Grade, %                 | -      | 0     | -      | -          | 0      | -     | -      | 0    | -    | -     | 0    | -    |
| Peak Hour Factor         | 92     | 92    | 92     | 92         | 92     | 92    | 92     | 92   | 92   | 92    | 92   | 92   |
| Heavy Vehicles, %        | 2      | 2     | 2      | 2          | 2      | 2     | 2      | 2    | 2    | 2     | 2    | 2    |
| Mvmt Flow                | 5      | 33    | 11     | 38         | 22     | 33    | 5      | 489  | 179  | 98    | 321  | 5    |
| Major/Minor              | Minor2 |       | Minor1 |            | Major1 |       | Major2 |      |      |       |      |      |
| Conflicting Flow All     | 1136   | 1198  | 324    | 1131       | 1111   | 579   | 326    | 0    | 0    | 668   | 0    | 0    |
| Stage 1                  | 520    | 520   | -      | 589        | 589    | -     | -      | -    | -    | -     | -    | -    |
| Stage 2                  | 616    | 678   | -      | 542        | 522    | -     | -      | -    | -    | -     | -    | -    |
| Critical Hdwy            | 7.12   | 6.52  | 6.22   | 7.12       | 6.52   | 6.22  | 4.12   | -    | -    | 4.12  | -    | -    |
| Critical Hdwy Stg 1      | 6.12   | 5.52  | -      | 6.12       | 5.52   | -     | -      | -    | -    | -     | -    | -    |
| Critical Hdwy Stg 2      | 6.12   | 5.52  | -      | 6.12       | 5.52   | -     | -      | -    | -    | -     | -    | -    |
| Follow-up Hdwy           | 3.518  | 4.018 | 3.318  | 3.518      | 4.018  | 3.318 | 2.218  | -    | -    | 2.218 | -    | -    |
| Pot Cap-1 Maneuver       | 179    | 186   | 717    | 181        | 209    | 515   | 1234   | -    | -    | 922   | -    | -    |
| Stage 1                  | 539    | 532   | -      | 494        | 495    | -     | -      | -    | -    | -     | -    | -    |
| Stage 2                  | 478    | 452   | -      | 525        | 531    | -     | -      | -    | -    | -     | -    | -    |
| Platoon blocked, %       |        |       |        |            |        |       |        | -    | -    |       | -    | -    |
| Mov Cap-1 Maneuver       | 137    | 161   | 717    | 135        | 181    | 515   | 1234   | -    | -    | 922   | -    | -    |
| Mov Cap-2 Maneuver       | 137    | 161   | -      | 135        | 181    | -     | -      | -    | -    | -     | -    | -    |
| Stage 1                  | 535    | 463   | -      | 491        | 492    | -     | -      | -    | -    | -     | -    | -    |
| Stage 2                  | 425    | 449   | -      | 418        | 462    | -     | -      | -    | -    | -     | -    | -    |
| Approach                 | EB     |       | WB     |            | NB     |       | SB     |      |      |       |      |      |
| HCM Control Delay, s     | 30.4   |       | 37.9   |            | 0.1    |       | 2.2    |      |      |       |      |      |
| HCM LOS                  | D      |       | E      |            |        |       |        |      |      |       |      |      |
| Minor Lane/Major Mvmt    | NBL    | NBT   | NBR    | EBLn1WBLn1 | SBL    | SBT   | SBR    |      |      |       |      |      |
| Capacity (veh/h)         | 1234   | -     | -      | 190        | 199    | 922   | -      | -    |      |       |      |      |
| HCM Lane V/C Ratio       | 0.004  | -     | -      | 0.257      | 0.464  | 0.106 | -      | -    |      |       |      |      |
| HCM Control Delay (s)    | 7.9    | 0     | -      | 30.4       | 37.9   | 9.4   | 0      | -    |      |       |      |      |
| HCM Lane LOS             | A      | A     | -      | D          | E      | A     | A      | -    |      |       |      |      |
| HCM 95th %tile Q(veh)    | 0      | -     | -      | 1          | 2.2    | 0.4   | -      | -    |      |       |      |      |

| Intersection             |                                                                                   |      |        |                                                                                   |        |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|------|--------|-----------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------|
| Int Delay, s/veh         | 1.3                                                                               |      |        |                                                                                   |        |                                                                                   |
| Movement                 | EBT                                                                               | EBR  | WBL    | WBT                                                                               | NBL    | NBR                                                                               |
| Lane Configurations      |  |      |        |  |        |  |
| Traffic Vol, veh/h       | 185                                                                               | 100  | 60     | 85                                                                                | 5      | 5                                                                                 |
| Future Vol, veh/h        | 185                                                                               | 100  | 60     | 85                                                                                | 5      | 5                                                                                 |
| Conflicting Peds, #/hr   | 0                                                                                 | 0    | 0      | 0                                                                                 | 0      | 0                                                                                 |
| Sign Control             | Free                                                                              | Free | Free   | Free                                                                              | Stop   | Stop                                                                              |
| RT Channelized           | -                                                                                 | None | -      | None                                                                              | -      | None                                                                              |
| Storage Length           | -                                                                                 | -    | -      | -                                                                                 | 0      | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -    | -      | 0                                                                                 | 0      | -                                                                                 |
| Grade, %                 | 0                                                                                 | -    | -      | 0                                                                                 | 0      | -                                                                                 |
| Peak Hour Factor         | 92                                                                                | 92   | 92     | 92                                                                                | 92     | 92                                                                                |
| Heavy Vehicles, %        | 2                                                                                 | 2    | 2      | 2                                                                                 | 2      | 2                                                                                 |
| Mvmt Flow                | 201                                                                               | 109  | 65     | 92                                                                                | 5      | 5                                                                                 |
|                          |                                                                                   |      |        |                                                                                   |        |                                                                                   |
| Major/Minor              | Major1                                                                            |      | Major2 |                                                                                   | Minor1 |                                                                                   |
| Conflicting Flow All     | 0                                                                                 | 0    | 310    | 0                                                                                 | 478    | 256                                                                               |
| Stage 1                  | -                                                                                 | -    | -      | -                                                                                 | 256    | -                                                                                 |
| Stage 2                  | -                                                                                 | -    | -      | -                                                                                 | 222    | -                                                                                 |
| Critical Hdwy            | -                                                                                 | -    | 4.12   | -                                                                                 | 6.42   | 6.22                                                                              |
| Critical Hdwy Stg 1      | -                                                                                 | -    | -      | -                                                                                 | 5.42   | -                                                                                 |
| Critical Hdwy Stg 2      | -                                                                                 | -    | -      | -                                                                                 | 5.42   | -                                                                                 |
| Follow-up Hdwy           | -                                                                                 | -    | 2.218  | -                                                                                 | 3.518  | 3.318                                                                             |
| Pot Cap-1 Maneuver       | -                                                                                 | -    | 1250   | -                                                                                 | 546    | 783                                                                               |
| Stage 1                  | -                                                                                 | -    | -      | -                                                                                 | 787    | -                                                                                 |
| Stage 2                  | -                                                                                 | -    | -      | -                                                                                 | 815    | -                                                                                 |
| Platoon blocked, %       | -                                                                                 | -    |        | -                                                                                 |        |                                                                                   |
| Mov Cap-1 Maneuver       | -                                                                                 | -    | 1250   | -                                                                                 | 516    | 783                                                                               |
| Mov Cap-2 Maneuver       | -                                                                                 | -    | -      | -                                                                                 | 516    | -                                                                                 |
| Stage 1                  | -                                                                                 | -    | -      | -                                                                                 | 744    | -                                                                                 |
| Stage 2                  | -                                                                                 | -    | -      | -                                                                                 | 815    | -                                                                                 |
|                          |                                                                                   |      |        |                                                                                   |        |                                                                                   |
|                          |                                                                                   |      |        |                                                                                   |        |                                                                                   |
| Approach                 | EB                                                                                |      | WB     |                                                                                   | NB     |                                                                                   |
| HCM Control Delay, s     | 0                                                                                 |      | 3.3    |                                                                                   | 10.9   |                                                                                   |
| HCM LOS                  |                                                                                   |      |        |                                                                                   | B      |                                                                                   |
|                          |                                                                                   |      |        |                                                                                   |        |                                                                                   |
|                          |                                                                                   |      |        |                                                                                   |        |                                                                                   |
| Minor Lane/Major Mvmt    | NBLn1                                                                             | EBT  | EBR    | WBL                                                                               | WBT    |                                                                                   |
| Capacity (veh/h)         | 622                                                                               | -    | -      | 1250                                                                              | -      |                                                                                   |
| HCM Lane V/C Ratio       | 0.017                                                                             | -    | -      | 0.052                                                                             | -      |                                                                                   |
| HCM Control Delay (s)    | 10.9                                                                              | -    | -      | 8                                                                                 | 0      |                                                                                   |
| HCM Lane LOS             | B                                                                                 | -    | -      | A                                                                                 | A      |                                                                                   |
| HCM 95th %tile Q(veh)    | 0.1                                                                               | -    | -      | 0.2                                                                               | -      |                                                                                   |

| Intersection             |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
|--------------------------|--------|-----------------------------------------------------------------------------------|------|--------|-----------------------------------------------------------------------------------|------|--------|-----------------------------------------------------------------------------------|-------|--------|-------------------------------------------------------------------------------------|-------|
| Int Delay, s/veh         | 6.3    |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
| Movement                 | EBL    | EBT                                                                               | EBR  | WBL    | WBT                                                                               | WBR  | NBL    | NBT                                                                               | NBR   | SBL    | SBT                                                                                 | SBR   |
| Lane Configurations      |        |  |      |        |  |      |        |  |       |        |  |       |
| Traffic Vol, veh/h       | 25     | 155                                                                               | 10   | 20     | 105                                                                               | 5    | 15     | 85                                                                                | 50    | 15     | 55                                                                                  | 25    |
| Future Vol, veh/h        | 25     | 155                                                                               | 10   | 20     | 105                                                                               | 5    | 15     | 85                                                                                | 50    | 15     | 55                                                                                  | 25    |
| Conflicting Peds, #/hr   | 0      | 0                                                                                 | 0    | 0      | 0                                                                                 | 0    | 0      | 0                                                                                 | 0     | 0      | 0                                                                                   | 0     |
| Sign Control             | Free   | Free                                                                              | Free | Free   | Free                                                                              | Free | Stop   | Stop                                                                              | Stop  | Stop   | Stop                                                                                | Stop  |
| RT Channelized           | -      | -                                                                                 | None | -      | -                                                                                 | None | -      | -                                                                                 | None  | -      | -                                                                                   | None  |
| Storage Length           | -      | -                                                                                 | -    | -      | -                                                                                 | -    | -      | -                                                                                 | -     | -      | -                                                                                   | -     |
| Veh in Median Storage, # | -      | 0                                                                                 | -    | -      | 0                                                                                 | -    | -      | 0                                                                                 | -     | -      | 0                                                                                   | -     |
| Grade, %                 | -      | 0                                                                                 | -    | -      | 0                                                                                 | -    | -      | 0                                                                                 | -     | -      | 0                                                                                   | -     |
| Peak Hour Factor         | 92     | 92                                                                                | 92   | 92     | 92                                                                                | 92   | 92     | 92                                                                                | 92    | 92     | 92                                                                                  | 92    |
| Heavy Vehicles, %        | 2      | 2                                                                                 | 2    | 2      | 2                                                                                 | 2    | 2      | 2                                                                                 | 2     | 2      | 2                                                                                   | 2     |
| Mvmt Flow                | 27     | 168                                                                               | 11   | 22     | 114                                                                               | 5    | 16     | 92                                                                                | 54    | 16     | 60                                                                                  | 27    |
|                          |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
| Major/Minor              | Major1 |                                                                                   |      | Major2 |                                                                                   |      | Minor1 |                                                                                   |       | Minor2 |                                                                                     |       |
| Conflicting Flow All     | 119    | 0                                                                                 | 0    | 179    | 0                                                                                 | 0    | 432    | 391                                                                               | 174   | 462    | 394                                                                                 | 117   |
| Stage 1                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 228    | 228                                                                               | -     | 161    | 161                                                                                 | -     |
| Stage 2                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 204    | 163                                                                               | -     | 301    | 233                                                                                 | -     |
| Critical Hdwy            | 4.12   | -                                                                                 | -    | 4.12   | -                                                                                 | -    | 7.12   | 6.52                                                                              | 6.22  | 7.12   | 6.52                                                                                | 6.22  |
| Critical Hdwy Stg 1      | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 6.12   | 5.52                                                                              | -     | 6.12   | 5.52                                                                                | -     |
| Critical Hdwy Stg 2      | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 6.12   | 5.52                                                                              | -     | 6.12   | 5.52                                                                                | -     |
| Follow-up Hdwy           | 2.218  | -                                                                                 | -    | 2.218  | -                                                                                 | -    | 3.518  | 4.018                                                                             | 3.318 | 3.518  | 4.018                                                                               | 3.318 |
| Pot Cap-1 Maneuver       | 1469   | -                                                                                 | -    | 1397   | -                                                                                 | -    | 534    | 545                                                                               | 869   | 510    | 542                                                                                 | 935   |
| Stage 1                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 775    | 715                                                                               | -     | 841    | 765                                                                                 | -     |
| Stage 2                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 798    | 763                                                                               | -     | 708    | 712                                                                                 | -     |
| Platoon blocked, %       |        | -                                                                                 | -    |        | -                                                                                 | -    |        |                                                                                   |       |        |                                                                                     |       |
| Mov Cap-1 Maneuver       | 1469   | -                                                                                 | -    | 1397   | -                                                                                 | -    | 460    | 525                                                                               | 869   | 402    | 522                                                                                 | 935   |
| Mov Cap-2 Maneuver       | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 460    | 525                                                                               | -     | 402    | 522                                                                                 | -     |
| Stage 1                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 760    | 701                                                                               | -     | 824    | 752                                                                                 | -     |
| Stage 2                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 701    | 750                                                                               | -     | 565    | 698                                                                                 | -     |
|                          |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
|                          |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
| Approach                 | EB     |                                                                                   |      | WB     |                                                                                   |      | NB     |                                                                                   |       | SB     |                                                                                     |       |
| HCM Control Delay, s     | 1      |                                                                                   |      | 1.2    |                                                                                   |      | 13.3   |                                                                                   |       | 12.9   |                                                                                     |       |
| HCM LOS                  |        |                                                                                   |      |        |                                                                                   |      | B      |                                                                                   |       | B      |                                                                                     |       |
|                          |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
| Minor Lane/Major Mvmt    | NBLn1  | EBL                                                                               | EBT  | EBR    | WBL                                                                               | WBT  | WBR    | SBLn1                                                                             |       |        |                                                                                     |       |
| Capacity (veh/h)         | 595    | 1469                                                                              | -    | -      | 1397                                                                              | -    | -      | 561                                                                               |       |        |                                                                                     |       |
| HCM Lane V/C Ratio       | 0.274  | 0.018                                                                             | -    | -      | 0.016                                                                             | -    | -      | 0.184                                                                             |       |        |                                                                                     |       |
| HCM Control Delay (s)    | 13.3   | 7.5                                                                               | 0    | -      | 7.6                                                                               | 0    | -      | 12.9                                                                              |       |        |                                                                                     |       |
| HCM Lane LOS             | B      | A                                                                                 | A    | -      | A                                                                                 | A    | -      | B                                                                                 |       |        |                                                                                     |       |
| HCM 95th %tile Q(veh)    | 1.1    | 0.1                                                                               | -    | -      | 0                                                                                 | -    | -      | 0.7                                                                               |       |        |                                                                                     |       |



HCM 2010 TWSC  
10: Division Rd & Road 3E

PM Peak Hour  
2022 Total Future

| Intersection             |        |                                                                                   |        |       |                                                                                   |        |       |                                                                                   |        |                                                                                     |                                                                                     |      |
|--------------------------|--------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|--------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------|
| Int Delay, s/veh         | 17.4   |                                                                                   |        |       |                                                                                   |        |       |                                                                                   |        |                                                                                     |                                                                                     |      |
| Movement                 | EBL    | EBT                                                                               | EBR    | WBL   | WBT                                                                               | WBR    | NBL   | NBT                                                                               | NBR    | SBL                                                                                 | SBT                                                                                 | SBR  |
| Lane Configurations      |        |  |        |       |  |        |       |  |        |  |  |      |
| Traffic Vol, veh/h       | 10     | 25                                                                                | 15     | 100   | 50                                                                                | 80     | 15    | 335                                                                               | 25     | 20                                                                                  | 490                                                                                 | 5    |
| Future Vol, veh/h        | 10     | 25                                                                                | 15     | 100   | 50                                                                                | 80     | 15    | 335                                                                               | 25     | 20                                                                                  | 490                                                                                 | 5    |
| Conflicting Peds, #/hr   | 0      | 0                                                                                 | 0      | 0     | 0                                                                                 | 0      | 0     | 0                                                                                 | 0      | 0                                                                                   | 0                                                                                   | 0    |
| Sign Control             | Stop   | Stop                                                                              | Stop   | Stop  | Stop                                                                              | Stop   | Free  | Free                                                                              | Free   | Free                                                                                | Free                                                                                | Free |
| RT Channelized           | -      | -                                                                                 | None   | -     | -                                                                                 | None   | -     | -                                                                                 | None   | -                                                                                   | -                                                                                   | None |
| Storage Length           | -      | -                                                                                 | -      | -     | -                                                                                 | -      | -     | -                                                                                 | -      | 0                                                                                   | -                                                                                   | -    |
| Veh in Median Storage, # | -      | 0                                                                                 | -      | -     | 0                                                                                 | -      | -     | 0                                                                                 | -      | -                                                                                   | 0                                                                                   | -    |
| Grade, %                 | -      | 0                                                                                 | -      | -     | 0                                                                                 | -      | -     | 0                                                                                 | -      | -                                                                                   | 0                                                                                   | -    |
| Peak Hour Factor         | 92     | 92                                                                                | 92     | 92    | 92                                                                                | 92     | 92    | 92                                                                                | 92     | 92                                                                                  | 92                                                                                  | 92   |
| Heavy Vehicles, %        | 2      | 2                                                                                 | 2      | 2     | 2                                                                                 | 2      | 2     | 2                                                                                 | 2      | 2                                                                                   | 2                                                                                   | 2    |
| Mvmt Flow                | 11     | 27                                                                                | 16     | 109   | 54                                                                                | 87     | 16    | 364                                                                               | 27     | 22                                                                                  | 533                                                                                 | 5    |
|                          |        |                                                                                   |        |       |                                                                                   |        |       |                                                                                   |        |                                                                                     |                                                                                     |      |
| Major/Minor              | Minor2 |                                                                                   | Minor1 |       |                                                                                   | Major1 |       |                                                                                   | Major2 |                                                                                     |                                                                                     |      |
| Conflicting Flow All     | 1060   | 1003                                                                              | 536    | 1011  | 992                                                                               | 378    | 538   | 0                                                                                 | 0      | 391                                                                                 | 0                                                                                   | 0    |
| Stage 1                  | 580    | 580                                                                               | -      | 410   | 410                                                                               | -      | -     | -                                                                                 | -      | -                                                                                   | -                                                                                   | -    |
| Stage 2                  | 480    | 423                                                                               | -      | 601   | 582                                                                               | -      | -     | -                                                                                 | -      | -                                                                                   | -                                                                                   | -    |
| Critical Hdwy            | 7.12   | 6.52                                                                              | 6.22   | 7.12  | 6.52                                                                              | 6.22   | 4.12  | -                                                                                 | -      | 4.12                                                                                | -                                                                                   | -    |
| Critical Hdwy Stg 1      | 6.12   | 5.52                                                                              | -      | 6.12  | 5.52                                                                              | -      | -     | -                                                                                 | -      | -                                                                                   | -                                                                                   | -    |
| Critical Hdwy Stg 2      | 6.12   | 5.52                                                                              | -      | 6.12  | 5.52                                                                              | -      | -     | -                                                                                 | -      | -                                                                                   | -                                                                                   | -    |
| Follow-up Hdwy           | 3.518  | 4.018                                                                             | 3.318  | 3.518 | 4.018                                                                             | 3.318  | 2.218 | -                                                                                 | -      | 2.218                                                                               | -                                                                                   | -    |
| Pot Cap-1 Maneuver       | 202    | 242                                                                               | 545    | 218   | 246                                                                               | 669    | 1030  | -                                                                                 | -      | 1168                                                                                | -                                                                                   | -    |
| Stage 1                  | 500    | 500                                                                               | -      | 619   | 595                                                                               | -      | -     | -                                                                                 | -      | -                                                                                   | -                                                                                   | -    |
| Stage 2                  | 567    | 588                                                                               | -      | 487   | 499                                                                               | -      | -     | -                                                                                 | -      | -                                                                                   | -                                                                                   | -    |
| Platoon blocked, %       |        |                                                                                   |        |       |                                                                                   |        |       | -                                                                                 | -      |                                                                                     | -                                                                                   | -    |
| Mov Cap-1 Maneuver       | 140    | 233                                                                               | 545    | 187   | 236                                                                               | 669    | 1030  | -                                                                                 | -      | 1168                                                                                | -                                                                                   | -    |
| Mov Cap-2 Maneuver       | 140    | 233                                                                               | -      | 187   | 236                                                                               | -      | -     | -                                                                                 | -      | -                                                                                   | -                                                                                   | -    |
| Stage 1                  | 490    | 491                                                                               | -      | 607   | 583                                                                               | -      | -     | -                                                                                 | -      | -                                                                                   | -                                                                                   | -    |
| Stage 2                  | 438    | 576                                                                               | -      | 438   | 490                                                                               | -      | -     | -                                                                                 | -      | -                                                                                   | -                                                                                   | -    |
|                          |        |                                                                                   |        |       |                                                                                   |        |       |                                                                                   |        |                                                                                     |                                                                                     |      |
|                          |        |                                                                                   |        |       |                                                                                   |        |       |                                                                                   |        |                                                                                     |                                                                                     |      |
| Approach                 | EB     |                                                                                   | WB     |       |                                                                                   | NB     |       |                                                                                   | SB     |                                                                                     |                                                                                     |      |
| HCM Control Delay, s     | 24.1   |                                                                                   | 81.9   |       |                                                                                   | 0.3    |       |                                                                                   | 0.3    |                                                                                     |                                                                                     |      |
| HCM LOS                  | C      |                                                                                   | F      |       |                                                                                   |        |       |                                                                                   |        |                                                                                     |                                                                                     |      |
|                          |        |                                                                                   |        |       |                                                                                   |        |       |                                                                                   |        |                                                                                     |                                                                                     |      |
| Minor Lane/Major Mvmt    | NBL    |                                                                                   | NBT    | NBR   |                                                                                   | EBLn1  | WBLn1 | SBL                                                                               | SBT    | SBR                                                                                 |                                                                                     |      |
| Capacity (veh/h)         | 1030   |                                                                                   | -      | -     | 242                                                                               | 266    | 1168  | -                                                                                 | -      |                                                                                     |                                                                                     |      |
| HCM Lane V/C Ratio       | 0.016  |                                                                                   | -      | -     | 0.225                                                                             | 0.94   | 0.019 | -                                                                                 | -      |                                                                                     |                                                                                     |      |
| HCM Control Delay (s)    | 8.6    |                                                                                   | 0      | -     | 24.1                                                                              | 81.9   | 8.1   | -                                                                                 | -      |                                                                                     |                                                                                     |      |
| HCM Lane LOS             | A      |                                                                                   | A      | -     | C                                                                                 | F      | A     | -                                                                                 | -      |                                                                                     |                                                                                     |      |
| HCM 95th %tile Q(veh)    | 0      |                                                                                   | -      | -     | 0.8                                                                               | 8.7    | 0.1   | -                                                                                 | -      |                                                                                     |                                                                                     |      |

Intersection

Int Delay, s/veh 4.6

| Movement                 | EBT                                                                               | EBR  | WBL  | WBT                                                                               | NBL                                                                               | NBR  |
|--------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Configurations      |  |      |      |  |  |      |
| Traffic Vol, veh/h       | 70                                                                                | 5    | 5    | 135                                                                               | 100                                                                               | 60   |
| Future Vol, veh/h        | 70                                                                                | 5    | 5    | 135                                                                               | 100                                                                               | 60   |
| Conflicting Peds, #/hr   | 0                                                                                 | 0    | 0    | 0                                                                                 | 0                                                                                 | 0    |
| Sign Control             | Free                                                                              | Free | Free | Free                                                                              | Stop                                                                              | Stop |
| RT Channelized           | -                                                                                 | None | -    | None                                                                              | -                                                                                 | None |
| Storage Length           | -                                                                                 | -    | -    | -                                                                                 | 0                                                                                 | -    |
| Veh in Median Storage, # | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Grade, %                 | 0                                                                                 | -    | -    | 0                                                                                 | 0                                                                                 | -    |
| Peak Hour Factor         | 92                                                                                | 92   | 92   | 92                                                                                | 92                                                                                | 92   |
| Heavy Vehicles, %        | 2                                                                                 | 2    | 2    | 2                                                                                 | 2                                                                                 | 2    |
| Mvmt Flow                | 76                                                                                | 5    | 5    | 147                                                                               | 109                                                                               | 65   |

| Major/Minor          | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 0      | 0      | 81     |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |
| Critical Hdwy        | -      | -      | 4.12   |
| Critical Hdwy Stg 1  | -      | -      | -      |
| Critical Hdwy Stg 2  | -      | -      | -      |
| Follow-up Hdwy       | -      | -      | 2.218  |
| Pot Cap-1 Maneuver   | -      | -      | 1517   |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |
| Platoon blocked, %   | -      | -      | -      |
| Mov Cap-1 Maneuver   | -      | -      | 1517   |
| Mov Cap-2 Maneuver   | -      | -      | -      |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |

| Approach             | EB | WB  | NB   |
|----------------------|----|-----|------|
| HCM Control Delay, s | 0  | 0.3 | 10.6 |
| HCM LOS              |    |     | B    |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL   | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h)      | 822   | -   | -   | 1517  | -   |
| HCM Lane V/C Ratio    | 0.212 | -   | -   | 0.004 | -   |
| HCM Control Delay (s) | 10.6  | -   | -   | 7.4   | 0   |
| HCM Lane LOS          | B     | -   | -   | A     | A   |
| HCM 95th %tile Q(veh) | 0.8   | -   | -   | 0     | -   |

| Intersection             |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
|--------------------------|--------|-----------------------------------------------------------------------------------|------|--------|-----------------------------------------------------------------------------------|------|--------|-----------------------------------------------------------------------------------|-------|--------|-------------------------------------------------------------------------------------|-------|
| Int Delay, s/veh         | 7.5    |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
| Movement                 | EBL    | EBT                                                                               | EBR  | WBL    | WBT                                                                               | WBR  | NBL    | NBT                                                                               | NBR   | SBL    | SBT                                                                                 | SBR   |
| Lane Configurations      |        |  |      |        |  |      |        |  |       |        |  |       |
| Traffic Vol, veh/h       | 15     | 90                                                                                | 20   | 65     | 110                                                                               | 20   | 5      | 65                                                                                | 25    | 15     | 120                                                                                 | 20    |
| Future Vol, veh/h        | 15     | 90                                                                                | 20   | 65     | 110                                                                               | 20   | 5      | 65                                                                                | 25    | 15     | 120                                                                                 | 20    |
| Conflicting Peds, #/hr   | 0      | 0                                                                                 | 0    | 0      | 0                                                                                 | 0    | 0      | 0                                                                                 | 0     | 0      | 0                                                                                   | 0     |
| Sign Control             | Free   | Free                                                                              | Free | Free   | Free                                                                              | Free | Stop   | Stop                                                                              | Stop  | Stop   | Stop                                                                                | Stop  |
| RT Channelized           | -      | -                                                                                 | None | -      | -                                                                                 | None | -      | -                                                                                 | None  | -      | -                                                                                   | None  |
| Storage Length           | -      | -                                                                                 | -    | -      | -                                                                                 | -    | -      | -                                                                                 | -     | -      | -                                                                                   | -     |
| Veh in Median Storage, # | -      | 0                                                                                 | -    | -      | 0                                                                                 | -    | -      | 0                                                                                 | -     | -      | 0                                                                                   | -     |
| Grade, %                 | -      | 0                                                                                 | -    | -      | 0                                                                                 | -    | -      | 0                                                                                 | -     | -      | 0                                                                                   | -     |
| Peak Hour Factor         | 92     | 92                                                                                | 92   | 92     | 92                                                                                | 92   | 92     | 92                                                                                | 92    | 92     | 92                                                                                  | 92    |
| Heavy Vehicles, %        | 2      | 2                                                                                 | 2    | 2      | 2                                                                                 | 2    | 2      | 2                                                                                 | 2     | 2      | 2                                                                                   | 2     |
| Mvmt Flow                | 16     | 98                                                                                | 22   | 71     | 120                                                                               | 22   | 5      | 71                                                                                | 27    | 16     | 130                                                                                 | 22    |
|                          |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
| Major/Minor              | Major1 |                                                                                   |      | Major2 |                                                                                   |      | Minor1 |                                                                                   |       | Minor2 |                                                                                     |       |
| Conflicting Flow All     | 142    | 0                                                                                 | 0    | 120    | 0                                                                                 | 0    | 490    | 425                                                                               | 109   | 463    | 425                                                                                 | 131   |
| Stage 1                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 141    | 141                                                                               | -     | 273    | 273                                                                                 | -     |
| Stage 2                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 349    | 284                                                                               | -     | 190    | 152                                                                                 | -     |
| Critical Hdwy            | 4.12   | -                                                                                 | -    | 4.12   | -                                                                                 | -    | 7.12   | 6.52                                                                              | 6.22  | 7.12   | 6.52                                                                                | 6.22  |
| Critical Hdwy Stg 1      | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 6.12   | 5.52                                                                              | -     | 6.12   | 5.52                                                                                | -     |
| Critical Hdwy Stg 2      | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 6.12   | 5.52                                                                              | -     | 6.12   | 5.52                                                                                | -     |
| Follow-up Hdwy           | 2.218  | -                                                                                 | -    | 2.218  | -                                                                                 | -    | 3.518  | 4.018                                                                             | 3.318 | 3.518  | 4.018                                                                               | 3.318 |
| Pot Cap-1 Maneuver       | 1441   | -                                                                                 | -    | 1468   | -                                                                                 | -    | 489    | 521                                                                               | 945   | 509    | 521                                                                                 | 919   |
| Stage 1                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 862    | 780                                                                               | -     | 733    | 684                                                                                 | -     |
| Stage 2                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 667    | 676                                                                               | -     | 812    | 772                                                                                 | -     |
| Platoon blocked, %       |        | -                                                                                 | -    |        | -                                                                                 | -    |        |                                                                                   |       |        |                                                                                     |       |
| Mov Cap-1 Maneuver       | 1441   | -                                                                                 | -    | 1468   | -                                                                                 | -    | 361    | 488                                                                               | 945   | 418    | 488                                                                                 | 919   |
| Mov Cap-2 Maneuver       | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 361    | 488                                                                               | -     | 418    | 488                                                                                 | -     |
| Stage 1                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 852    | 771                                                                               | -     | 724    | 648                                                                                 | -     |
| Stage 2                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 493    | 640                                                                               | -     | 708    | 763                                                                                 | -     |
|                          |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
|                          |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
| Approach                 | EB     |                                                                                   |      | WB     |                                                                                   |      | NB     |                                                                                   |       | SB     |                                                                                     |       |
| HCM Control Delay, s     | 0.9    |                                                                                   |      | 2.5    |                                                                                   |      | 13.1   |                                                                                   |       | 15.5   |                                                                                     |       |
| HCM LOS                  |        |                                                                                   |      |        |                                                                                   |      | B      |                                                                                   |       | C      |                                                                                     |       |
|                          |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
| Minor Lane/Major Mvmt    | NBLn1  | EBL                                                                               | EBT  | EBR    | WBL                                                                               | WBT  | WBR    | SBLn1                                                                             |       |        |                                                                                     |       |
| Capacity (veh/h)         | 548    | 1441                                                                              | -    | -      | 1468                                                                              | -    | -      | 511                                                                               |       |        |                                                                                     |       |
| HCM Lane V/C Ratio       | 0.188  | 0.011                                                                             | -    | -      | 0.048                                                                             | -    | -      | 0.33                                                                              |       |        |                                                                                     |       |
| HCM Control Delay (s)    | 13.1   | 7.5                                                                               | 0    | -      | 7.6                                                                               | 0    | -      | 15.5                                                                              |       |        |                                                                                     |       |
| HCM Lane LOS             | B      | A                                                                                 | A    | -      | A                                                                                 | A    | -      | C                                                                                 |       |        |                                                                                     |       |
| HCM 95th %tile Q(veh)    | 0.7    | 0                                                                                 | -    | -      | 0.2                                                                               | -    | -      | 1.4                                                                               |       |        |                                                                                     |       |

HCM 2010 TWSC  
10: Division Rd & Road 3E

AM Peak Hour  
2027 Total Future

| Intersection             |        |                                                                                   |        |       |                                                                                   |        |       |                                                                                   |        |       |                                                                                     |      |
|--------------------------|--------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|--------|-------|-------------------------------------------------------------------------------------|------|
| Int Delay, s/veh         | 5.4    |                                                                                   |        |       |                                                                                   |        |       |                                                                                   |        |       |                                                                                     |      |
| Movement                 | EBL    | EBT                                                                               | EBR    | WBL   | WBT                                                                               | WBR    | NBL   | NBT                                                                               | NBR    | SBL   | SBT                                                                                 | SBR  |
| Lane Configurations      |        |  |        |       |  |        |       |  |        |       |  |      |
| Traffic Vol, veh/h       | 5      | 30                                                                                | 10     | 35    | 25                                                                                | 25     | 5     | 480                                                                               | 165    | 90    | 315                                                                                 | 5    |
| Future Vol, veh/h        | 5      | 30                                                                                | 10     | 35    | 25                                                                                | 25     | 5     | 480                                                                               | 165    | 90    | 315                                                                                 | 5    |
| Conflicting Peds, #/hr   | 0      | 0                                                                                 | 0      | 0     | 0                                                                                 | 0      | 0     | 0                                                                                 | 0      | 0     | 0                                                                                   | 0    |
| Sign Control             | Stop   | Stop                                                                              | Stop   | Stop  | Stop                                                                              | Stop   | Free  | Free                                                                              | Free   | Free  | Free                                                                                | Free |
| RT Channelized           | -      | -                                                                                 | None   | -     | -                                                                                 | None   | -     | -                                                                                 | None   | -     | -                                                                                   | None |
| Storage Length           | -      | -                                                                                 | -      | -     | -                                                                                 | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Veh in Median Storage, # | -      | 0                                                                                 | -      | -     | 0                                                                                 | -      | -     | 0                                                                                 | -      | -     | 0                                                                                   | -    |
| Grade, %                 | -      | 0                                                                                 | -      | -     | 0                                                                                 | -      | -     | 0                                                                                 | -      | -     | 0                                                                                   | -    |
| Peak Hour Factor         | 92     | 92                                                                                | 92     | 92    | 92                                                                                | 92     | 92    | 92                                                                                | 92     | 92    | 92                                                                                  | 92   |
| Heavy Vehicles, %        | 2      | 2                                                                                 | 2      | 2     | 2                                                                                 | 2      | 2     | 2                                                                                 | 2      | 2     | 2                                                                                   | 2    |
| Mvmt Flow                | 5      | 33                                                                                | 11     | 38    | 27                                                                                | 27     | 5     | 522                                                                               | 179    | 98    | 342                                                                                 | 5    |
|                          |        |                                                                                   |        |       |                                                                                   |        |       |                                                                                   |        |       |                                                                                     |      |
| Major/Minor              | Minor2 |                                                                                   | Minor1 |       |                                                                                   | Major1 |       |                                                                                   | Major2 |       |                                                                                     |      |
| Conflicting Flow All     | 1190   | 1252                                                                              | 345    | 1185  | 1165                                                                              | 612    | 347   | 0                                                                                 | 0      | 701   | 0                                                                                   | 0    |
| Stage 1                  | 541    | 541                                                                               | -      | 622   | 622                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Stage 2                  | 649    | 711                                                                               | -      | 563   | 543                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Critical Hdwy            | 7.12   | 6.52                                                                              | 6.22   | 7.12  | 6.52                                                                              | 6.22   | 4.12  | -                                                                                 | -      | 4.12  | -                                                                                   | -    |
| Critical Hdwy Stg 1      | 6.12   | 5.52                                                                              | -      | 6.12  | 5.52                                                                              | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Critical Hdwy Stg 2      | 6.12   | 5.52                                                                              | -      | 6.12  | 5.52                                                                              | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Follow-up Hdwy           | 3.518  | 4.018                                                                             | 3.318  | 3.518 | 4.018                                                                             | 3.318  | 2.218 | -                                                                                 | -      | 2.218 | -                                                                                   | -    |
| Pot Cap-1 Maneuver       | 165    | 172                                                                               | 698    | 166   | 194                                                                               | 493    | 1212  | -                                                                                 | -      | 896   | -                                                                                   | -    |
| Stage 1                  | 525    | 521                                                                               | -      | 474   | 479                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Stage 2                  | 458    | 436                                                                               | -      | 511   | 520                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Platoon blocked, %       |        |                                                                                   |        |       |                                                                                   |        |       | -                                                                                 | -      |       | -                                                                                   | -    |
| Mov Cap-1 Maneuver       | 122    | 148                                                                               | 698    | 122   | 166                                                                               | 493    | 1212  | -                                                                                 | -      | 896   | -                                                                                   | -    |
| Mov Cap-2 Maneuver       | 122    | 148                                                                               | -      | 122   | 166                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Stage 1                  | 521    | 450                                                                               | -      | 471   | 476                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Stage 2                  | 405    | 433                                                                               | -      | 403   | 449                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
|                          |        |                                                                                   |        |       |                                                                                   |        |       |                                                                                   |        |       |                                                                                     |      |
| Approach                 | EB     |                                                                                   | WB     |       |                                                                                   | NB     |       |                                                                                   | SB     |       |                                                                                     |      |
| HCM Control Delay, s     | 33.6   |                                                                                   | 47     |       |                                                                                   | 0.1    |       |                                                                                   | 2.1    |       |                                                                                     |      |
| HCM LOS                  | D      |                                                                                   | E      |       |                                                                                   |        |       |                                                                                   |        |       |                                                                                     |      |
|                          |        |                                                                                   |        |       |                                                                                   |        |       |                                                                                   |        |       |                                                                                     |      |
| Minor Lane/Major Mvmt    | NBL    | NBT                                                                               | NBR    | EBLn1 | WBLn1                                                                             | SBL    | SBT   | SBR                                                                               |        |       |                                                                                     |      |
| Capacity (veh/h)         | 1212   | -                                                                                 | -      | 174   | 174                                                                               | 896    | -     | -                                                                                 |        |       |                                                                                     |      |
| HCM Lane V/C Ratio       | 0.004  | -                                                                                 | -      | 0.281 | 0.531                                                                             | 0.109  | -     | -                                                                                 |        |       |                                                                                     |      |
| HCM Control Delay (s)    | 8      | 0                                                                                 | -      | 33.6  | 47                                                                                | 9.5    | 0     | -                                                                                 |        |       |                                                                                     |      |
| HCM Lane LOS             | A      | A                                                                                 | -      | D     | E                                                                                 | A      | A     | -                                                                                 |        |       |                                                                                     |      |
| HCM 95th %tile Q(veh)    | 0      | -                                                                                 | -      | 1.1   | 2.7                                                                               | 0.4    | -     | -                                                                                 |        |       |                                                                                     |      |

| Intersection             |                                                                                   |      |        |                                                                                   |        |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|------|--------|-----------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------|
| Int Delay, s/veh         | 1.3                                                                               |      |        |                                                                                   |        |                                                                                   |
| Movement                 | EBT                                                                               | EBR  | WBL    | WBT                                                                               | NBL    | NBR                                                                               |
| Lane Configurations      |  |      |        |  |        |  |
| Traffic Vol, veh/h       | 190                                                                               | 100  | 60     | 85                                                                                | 5      | 5                                                                                 |
| Future Vol, veh/h        | 190                                                                               | 100  | 60     | 85                                                                                | 5      | 5                                                                                 |
| Conflicting Peds, #/hr   | 0                                                                                 | 0    | 0      | 0                                                                                 | 0      | 0                                                                                 |
| Sign Control             | Free                                                                              | Free | Free   | Free                                                                              | Stop   | Stop                                                                              |
| RT Channelized           | -                                                                                 | None | -      | None                                                                              | -      | None                                                                              |
| Storage Length           | -                                                                                 | -    | -      | -                                                                                 | 0      | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -    | -      | 0                                                                                 | 0      | -                                                                                 |
| Grade, %                 | 0                                                                                 | -    | -      | 0                                                                                 | 0      | -                                                                                 |
| Peak Hour Factor         | 92                                                                                | 92   | 92     | 92                                                                                | 92     | 92                                                                                |
| Heavy Vehicles, %        | 2                                                                                 | 2    | 2      | 2                                                                                 | 2      | 2                                                                                 |
| Mvmt Flow                | 207                                                                               | 109  | 65     | 92                                                                                | 5      | 5                                                                                 |
|                          |                                                                                   |      |        |                                                                                   |        |                                                                                   |
| Major/Minor              | Major1                                                                            |      | Major2 |                                                                                   | Minor1 |                                                                                   |
| Conflicting Flow All     | 0                                                                                 | 0    | 316    | 0                                                                                 | 484    | 262                                                                               |
| Stage 1                  | -                                                                                 | -    | -      | -                                                                                 | 262    | -                                                                                 |
| Stage 2                  | -                                                                                 | -    | -      | -                                                                                 | 222    | -                                                                                 |
| Critical Hdwy            | -                                                                                 | -    | 4.12   | -                                                                                 | 6.42   | 6.22                                                                              |
| Critical Hdwy Stg 1      | -                                                                                 | -    | -      | -                                                                                 | 5.42   | -                                                                                 |
| Critical Hdwy Stg 2      | -                                                                                 | -    | -      | -                                                                                 | 5.42   | -                                                                                 |
| Follow-up Hdwy           | -                                                                                 | -    | 2.218  | -                                                                                 | 3.518  | 3.318                                                                             |
| Pot Cap-1 Maneuver       | -                                                                                 | -    | 1244   | -                                                                                 | 542    | 777                                                                               |
| Stage 1                  | -                                                                                 | -    | -      | -                                                                                 | 782    | -                                                                                 |
| Stage 2                  | -                                                                                 | -    | -      | -                                                                                 | 815    | -                                                                                 |
| Platoon blocked, %       | -                                                                                 | -    |        | -                                                                                 |        |                                                                                   |
| Mov Cap-1 Maneuver       | -                                                                                 | -    | 1244   | -                                                                                 | 512    | 777                                                                               |
| Mov Cap-2 Maneuver       | -                                                                                 | -    | -      | -                                                                                 | 512    | -                                                                                 |
| Stage 1                  | -                                                                                 | -    | -      | -                                                                                 | 739    | -                                                                                 |
| Stage 2                  | -                                                                                 | -    | -      | -                                                                                 | 815    | -                                                                                 |
|                          |                                                                                   |      |        |                                                                                   |        |                                                                                   |
|                          |                                                                                   |      |        |                                                                                   |        |                                                                                   |
| Approach                 | EB                                                                                |      | WB     |                                                                                   | NB     |                                                                                   |
| HCM Control Delay, s     | 0                                                                                 |      | 3.3    |                                                                                   | 10.9   |                                                                                   |
| HCM LOS                  |                                                                                   |      |        |                                                                                   | B      |                                                                                   |
|                          |                                                                                   |      |        |                                                                                   |        |                                                                                   |
|                          |                                                                                   |      |        |                                                                                   |        |                                                                                   |
| Minor Lane/Major Mvmt    | NBLn1                                                                             | EBT  | EBR    | WBL                                                                               | WBT    |                                                                                   |
| Capacity (veh/h)         | 617                                                                               | -    | -      | 1244                                                                              | -      |                                                                                   |
| HCM Lane V/C Ratio       | 0.018                                                                             | -    | -      | 0.052                                                                             | -      |                                                                                   |
| HCM Control Delay (s)    | 10.9                                                                              | -    | -      | 8.1                                                                               | 0      |                                                                                   |
| HCM Lane LOS             | B                                                                                 | -    | -      | A                                                                                 | A      |                                                                                   |
| HCM 95th %tile Q(veh)    | 0.1                                                                               | -    | -      | 0.2                                                                               | -      |                                                                                   |

HCM 2010 TWSC  
30: Graham Side Rd & Road 3E

AM Peak Hour  
2027 Total Future

| Intersection             |        |              |      |        |              |      |        |              |       |        |              |       |
|--------------------------|--------|--------------|------|--------|--------------|------|--------|--------------|-------|--------|--------------|-------|
| Int Delay, s/veh         | 6.4    |              |      |        |              |      |        |              |       |        |              |       |
| Movement                 | EBL    | EBT          | EBR  | WBL    | WBT          | WBR  | NBL    | NBT          | NBR   | SBL    | SBT          | SBR   |
| Lane Configurations      |        | <div>↕</div> |      |        | <div>↕</div> |      |        | <div>↕</div> |       |        | <div>↕</div> |       |
| Traffic Vol, veh/h       | 25     | 160          | 10   | 20     | 105          | 5    | 15     | 90           | 50    | 15     | 55           | 25    |
| Future Vol, veh/h        | 25     | 160          | 10   | 20     | 105          | 5    | 15     | 90           | 50    | 15     | 55           | 25    |
| Conflicting Peds, #/hr   | 0      | 0            | 0    | 0      | 0            | 0    | 0      | 0            | 0     | 0      | 0            | 0     |
| Sign Control             | Free   | Free         | Free | Free   | Free         | Free | Stop   | Stop         | Stop  | Stop   | Stop         | Stop  |
| RT Channelized           | -      | -            | None | -      | -            | None | -      | -            | None  | -      | -            | None  |
| Storage Length           | -      | -            | -    | -      | -            | -    | -      | -            | -     | -      | -            | -     |
| Veh in Median Storage, # | -      | 0            | -    | -      | 0            | -    | -      | 0            | -     | -      | 0            | -     |
| Grade, %                 | -      | 0            | -    | -      | 0            | -    | -      | 0            | -     | -      | 0            | -     |
| Peak Hour Factor         | 92     | 92           | 92   | 92     | 92           | 92   | 92     | 92           | 92    | 92     | 92           | 92    |
| Heavy Vehicles, %        | 2      | 2            | 2    | 2      | 2            | 2    | 2      | 2            | 2     | 2      | 2            | 2     |
| Mvmt Flow                | 27     | 174          | 11   | 22     | 114          | 5    | 16     | 98           | 54    | 16     | 60           | 27    |
|                          |        |              |      |        |              |      |        |              |       |        |              |       |
| Major/Minor              | Major1 |              |      | Major2 |              |      | Minor1 |              |       | Minor2 |              |       |
| Conflicting Flow All     | 119    | 0            | 0    | 185    | 0            | 0    | 438    | 397          | 180   | 471    | 400          | 117   |
| Stage 1                  | -      | -            | -    | -      | -            | -    | 234    | 234          | -     | 161    | 161          | -     |
| Stage 2                  | -      | -            | -    | -      | -            | -    | 204    | 163          | -     | 310    | 239          | -     |
| Critical Hdwy            | 4.12   | -            | -    | 4.12   | -            | -    | 7.12   | 6.52         | 6.22  | 7.12   | 6.52         | 6.22  |
| Critical Hdwy Stg 1      | -      | -            | -    | -      | -            | -    | 6.12   | 5.52         | -     | 6.12   | 5.52         | -     |
| Critical Hdwy Stg 2      | -      | -            | -    | -      | -            | -    | 6.12   | 5.52         | -     | 6.12   | 5.52         | -     |
| Follow-up Hdwy           | 2.218  | -            | -    | 2.218  | -            | -    | 3.518  | 4.018        | 3.318 | 3.518  | 4.018        | 3.318 |
| Pot Cap-1 Maneuver       | 1469   | -            | -    | 1390   | -            | -    | 529    | 540          | 863   | 503    | 538          | 935   |
| Stage 1                  | -      | -            | -    | -      | -            | -    | 769    | 711          | -     | 841    | 765          | -     |
| Stage 2                  | -      | -            | -    | -      | -            | -    | 798    | 763          | -     | 700    | 708          | -     |
| Platoon blocked, %       |        | -            | -    |        | -            | -    |        |              |       |        |              |       |
| Mov Cap-1 Maneuver       | 1469   | -            | -    | 1390   | -            | -    | 455    | 519          | 863   | 392    | 518          | 935   |
| Mov Cap-2 Maneuver       | -      | -            | -    | -      | -            | -    | 455    | 519          | -     | 392    | 518          | -     |
| Stage 1                  | -      | -            | -    | -      | -            | -    | 753    | 696          | -     | 823    | 752          | -     |
| Stage 2                  | -      | -            | -    | -      | -            | -    | 701    | 750          | -     | 552    | 693          | -     |
|                          |        |              |      |        |              |      |        |              |       |        |              |       |
|                          |        |              |      |        |              |      |        |              |       |        |              |       |
| Approach                 | EB     |              |      | WB     |              |      | NB     |              |       | SB     |              |       |
| HCM Control Delay, s     | 1      |              |      | 1.2    |              |      | 13.6   |              |       | 13     |              |       |
| HCM LOS                  |        |              |      |        |              |      | B      |              |       | B      |              |       |
|                          |        |              |      |        |              |      |        |              |       |        |              |       |
| Minor Lane/Major Mvmt    | NBLn1  | EBL          | EBT  | EBR    | WBL          | WBT  | WBR    | SBLn1        |       |        |              |       |
| Capacity (veh/h)         | 586    | 1469         | -    | -      | 1390         | -    | -      | 555          |       |        |              |       |
| HCM Lane V/C Ratio       | 0.288  | 0.018        | -    | -      | 0.016        | -    | -      | 0.186        |       |        |              |       |
| HCM Control Delay (s)    | 13.6   | 7.5          | 0    | -      | 7.6          | 0    | -      | 13           |       |        |              |       |
| HCM Lane LOS             | B      | A            | A    | -      | A            | A    | -      | B            |       |        |              |       |
| HCM 95th %tile Q(veh)    | 1.2    | 0.1          | -    | -      | 0            | -    | -      | 0.7          |       |        |              |       |

| Intersection             |        |                                                                                   |        |       |                                                                                   |        |       |                                                                                   |        |       |                                                                                     |      |
|--------------------------|--------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|--------|-------|-------------------------------------------------------------------------------------|------|
| Int Delay, s/veh         | 24     |                                                                                   |        |       |                                                                                   |        |       |                                                                                   |        |       |                                                                                     |      |
| Movement                 | EBL    | EBT                                                                               | EBR    | WBL   | WBT                                                                               | WBR    | NBL   | NBT                                                                               | NBR    | SBL   | SBT                                                                                 | SBR  |
| Lane Configurations      |        |  |        |       |  |        |       |  |        |       |  |      |
| Traffic Vol, veh/h       | 10     | 25                                                                                | 15     | 100   | 55                                                                                | 80     | 15    | 360                                                                               | 25     | 20    | 520                                                                                 | 5    |
| Future Vol, veh/h        | 10     | 25                                                                                | 15     | 100   | 55                                                                                | 80     | 15    | 360                                                                               | 25     | 20    | 520                                                                                 | 5    |
| Conflicting Peds, #/hr   | 0      | 0                                                                                 | 0      | 0     | 0                                                                                 | 0      | 0     | 0                                                                                 | 0      | 0     | 0                                                                                   | 0    |
| Sign Control             | Stop   | Stop                                                                              | Stop   | Stop  | Stop                                                                              | Stop   | Free  | Free                                                                              | Free   | Free  | Free                                                                                | Free |
| RT Channelized           | -      | -                                                                                 | None   | -     | -                                                                                 | None   | -     | -                                                                                 | None   | -     | -                                                                                   | None |
| Storage Length           | -      | -                                                                                 | -      | -     | -                                                                                 | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Veh in Median Storage, # | -      | 0                                                                                 | -      | -     | 0                                                                                 | -      | -     | 0                                                                                 | -      | -     | 0                                                                                   | -    |
| Grade, %                 | -      | 0                                                                                 | -      | -     | 0                                                                                 | -      | -     | 0                                                                                 | -      | -     | 0                                                                                   | -    |
| Peak Hour Factor         | 92     | 92                                                                                | 92     | 92    | 92                                                                                | 92     | 92    | 92                                                                                | 92     | 92    | 92                                                                                  | 92   |
| Heavy Vehicles, %        | 2      | 2                                                                                 | 2      | 2     | 2                                                                                 | 2      | 2     | 2                                                                                 | 2      | 2     | 2                                                                                   | 2    |
| Mvmt Flow                | 11     | 27                                                                                | 16     | 109   | 60                                                                                | 87     | 16    | 391                                                                               | 27     | 22    | 565                                                                                 | 5    |
|                          |        |                                                                                   |        |       |                                                                                   |        |       |                                                                                   |        |       |                                                                                     |      |
| Major/Minor              | Minor2 |                                                                                   | Minor1 |       |                                                                                   | Major1 |       |                                                                                   | Major2 |       |                                                                                     |      |
| Conflicting Flow All     | 1122   | 1062                                                                              | 568    | 1070  | 1051                                                                              | 405    | 570   | 0                                                                                 | 0      | 418   | 0                                                                                   | 0    |
| Stage 1                  | 612    | 612                                                                               | -      | 437   | 437                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Stage 2                  | 510    | 450                                                                               | -      | 633   | 614                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Critical Hdwy            | 7.12   | 6.52                                                                              | 6.22   | 7.12  | 6.52                                                                              | 6.22   | 4.12  | -                                                                                 | -      | 4.12  | -                                                                                   | -    |
| Critical Hdwy Stg 1      | 6.12   | 5.52                                                                              | -      | 6.12  | 5.52                                                                              | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Critical Hdwy Stg 2      | 6.12   | 5.52                                                                              | -      | 6.12  | 5.52                                                                              | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Follow-up Hdwy           | 3.518  | 4.018                                                                             | 3.318  | 3.518 | 4.018                                                                             | 3.318  | 2.218 | -                                                                                 | -      | 2.218 | -                                                                                   | -    |
| Pot Cap-1 Maneuver       | 183    | 223                                                                               | 522    | 199   | 227                                                                               | 646    | 1002  | -                                                                                 | -      | 1141  | -                                                                                   | -    |
| Stage 1                  | 480    | 484                                                                               | -      | 598   | 579                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Stage 2                  | 546    | 572                                                                               | -      | 468   | 483                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Platoon blocked, %       |        |                                                                                   |        |       |                                                                                   |        |       | -                                                                                 | -      |       | -                                                                                   | -    |
| Mov Cap-1 Maneuver       | 120    | 212                                                                               | 522    | 168   | 216                                                                               | 646    | 1002  | -                                                                                 | -      | 1141  | -                                                                                   | -    |
| Mov Cap-2 Maneuver       | 120    | 212                                                                               | -      | 168   | 216                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Stage 1                  | 470    | 470                                                                               | -      | 585   | 567                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Stage 2                  | 414    | 560                                                                               | -      | 415   | 469                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
|                          |        |                                                                                   |        |       |                                                                                   |        |       |                                                                                   |        |       |                                                                                     |      |
| Approach                 | EB     |                                                                                   | WB     |       |                                                                                   | NB     |       |                                                                                   | SB     |       |                                                                                     |      |
| HCM Control Delay, s     | 27     |                                                                                   | 118.9  |       |                                                                                   | 0.3    |       |                                                                                   | 0.3    |       |                                                                                     |      |
| HCM LOS                  | D      |                                                                                   | F      |       |                                                                                   |        |       |                                                                                   |        |       |                                                                                     |      |
|                          |        |                                                                                   |        |       |                                                                                   |        |       |                                                                                   |        |       |                                                                                     |      |
| Minor Lane/Major Mvmt    | NBL    | NBT                                                                               | NBR    | EBLn1 | WBLn1                                                                             | SBL    | SBT   | SBR                                                                               |        |       |                                                                                     |      |
| Capacity (veh/h)         | 1002   | -                                                                                 | -      | 217   | 241                                                                               | 1141   | -     | -                                                                                 |        |       |                                                                                     |      |
| HCM Lane V/C Ratio       | 0.016  | -                                                                                 | -      | 0.25  | 1.06                                                                              | 0.019  | -     | -                                                                                 |        |       |                                                                                     |      |
| HCM Control Delay (s)    | 8.7    | 0                                                                                 | -      | 27    | 118.9                                                                             | 8.2    | 0     | -                                                                                 |        |       |                                                                                     |      |
| HCM Lane LOS             | A      | A                                                                                 | -      | D     | F                                                                                 | A      | A     | -                                                                                 |        |       |                                                                                     |      |
| HCM 95th %tile Q(veh)    | 0.1    | -                                                                                 | -      | 1     | 10.7                                                                              | 0.1    | -     | -                                                                                 |        |       |                                                                                     |      |

| Intersection             |                                                                                   |        |       |                                                                                   |                                                                                   |       |
|--------------------------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------|
| Int Delay, s/veh         | 4.6                                                                               |        |       |                                                                                   |                                                                                   |       |
| Movement                 | EBT                                                                               | EBR    | WBL   | WBT                                                                               | NBL                                                                               | NBR   |
| Lane Configurations      |  |        |       |  |  |       |
| Traffic Vol, veh/h       | 70                                                                                | 5      | 5     | 135                                                                               | 100                                                                               | 60    |
| Future Vol, veh/h        | 70                                                                                | 5      | 5     | 135                                                                               | 100                                                                               | 60    |
| Conflicting Peds, #/hr   | 0                                                                                 | 0      | 0     | 0                                                                                 | 0                                                                                 | 0     |
| Sign Control             | Free                                                                              | Free   | Free  | Free                                                                              | Stop                                                                              | Stop  |
| RT Channelized           | -                                                                                 | None   | -     | None                                                                              | -                                                                                 | None  |
| Storage Length           | -                                                                                 | -      | -     | -                                                                                 | 0                                                                                 | -     |
| Veh in Median Storage, # | 0                                                                                 | -      | -     | 0                                                                                 | 0                                                                                 | -     |
| Grade, %                 | 0                                                                                 | -      | -     | 0                                                                                 | 0                                                                                 | -     |
| Peak Hour Factor         | 92                                                                                | 92     | 92    | 92                                                                                | 92                                                                                | 92    |
| Heavy Vehicles, %        | 2                                                                                 | 2      | 2     | 2                                                                                 | 2                                                                                 | 2     |
| Mvmt Flow                | 76                                                                                | 5      | 5     | 147                                                                               | 109                                                                               | 65    |
| Major/Minor              | Major1                                                                            | Major2 |       | Minor1                                                                            |                                                                                   |       |
| Conflicting Flow All     | 0                                                                                 | 0      | 81    | 0                                                                                 | 236                                                                               | 79    |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 79                                                                                | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 157                                                                               | -     |
| Critical Hdwy            | -                                                                                 | -      | 4.12  | -                                                                                 | 6.42                                                                              | 6.22  |
| Critical Hdwy Stg 1      | -                                                                                 | -      | -     | -                                                                                 | 5.42                                                                              | -     |
| Critical Hdwy Stg 2      | -                                                                                 | -      | -     | -                                                                                 | 5.42                                                                              | -     |
| Follow-up Hdwy           | -                                                                                 | -      | 2.218 | -                                                                                 | 3.518                                                                             | 3.318 |
| Pot Cap-1 Maneuver       | -                                                                                 | -      | 1517  | -                                                                                 | 752                                                                               | 981   |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 944                                                                               | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 871                                                                               | -     |
| Platoon blocked, %       | -                                                                                 | -      | -     | -                                                                                 | -                                                                                 | -     |
| Mov Cap-1 Maneuver       | -                                                                                 | -      | 1517  | -                                                                                 | 749                                                                               | 981   |
| Mov Cap-2 Maneuver       | -                                                                                 | -      | -     | -                                                                                 | 749                                                                               | -     |
| Stage 1                  | -                                                                                 | -      | -     | -                                                                                 | 940                                                                               | -     |
| Stage 2                  | -                                                                                 | -      | -     | -                                                                                 | 871                                                                               | -     |
| Approach                 | EB                                                                                |        | WB    |                                                                                   | NB                                                                                |       |
| HCM Control Delay, s     | 0                                                                                 |        | 0.3   |                                                                                   | 10.6                                                                              |       |
| HCM LOS                  |                                                                                   |        |       |                                                                                   | B                                                                                 |       |
| Minor Lane/Major Mvmt    | NBLn1                                                                             | EBT    | EBR   | WBL                                                                               | WBT                                                                               |       |
| Capacity (veh/h)         | 822                                                                               | -      | -     | 1517                                                                              | -                                                                                 |       |
| HCM Lane V/C Ratio       | 0.212                                                                             | -      | -     | 0.004                                                                             | -                                                                                 |       |
| HCM Control Delay (s)    | 10.6                                                                              | -      | -     | 7.4                                                                               | 0                                                                                 |       |
| HCM Lane LOS             | B                                                                                 | -      | -     | A                                                                                 | A                                                                                 |       |
| HCM 95th %tile Q(veh)    | 0.8                                                                               | -      | -     | 0                                                                                 | -                                                                                 |       |



HCM 2010 TWSC  
30: Graham Side Rd & Road 3E

PM Peak Hour  
2027 Total Future

| Intersection             |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
|--------------------------|--------|-----------------------------------------------------------------------------------|------|--------|-----------------------------------------------------------------------------------|------|--------|-----------------------------------------------------------------------------------|-------|--------|-------------------------------------------------------------------------------------|-------|
| Int Delay, s/veh         | 7.9    |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
| Movement                 | EBL    | EBT                                                                               | EBR  | WBL    | WBT                                                                               | WBR  | NBL    | NBT                                                                               | NBR   | SBL    | SBT                                                                                 | SBR   |
| Lane Configurations      |        |  |      |        |  |      |        |  |       |        |  |       |
| Traffic Vol, veh/h       | 15     | 90                                                                                | 20   | 65     | 110                                                                               | 20   | 5      | 65                                                                                | 25    | 20     | 130                                                                                 | 25    |
| Future Vol, veh/h        | 15     | 90                                                                                | 20   | 65     | 110                                                                               | 20   | 5      | 65                                                                                | 25    | 20     | 130                                                                                 | 25    |
| Conflicting Peds, #/hr   | 0      | 0                                                                                 | 0    | 0      | 0                                                                                 | 0    | 0      | 0                                                                                 | 0     | 0      | 0                                                                                   | 0     |
| Sign Control             | Free   | Free                                                                              | Free | Free   | Free                                                                              | Free | Stop   | Stop                                                                              | Stop  | Stop   | Stop                                                                                | Stop  |
| RT Channelized           | -      | -                                                                                 | None | -      | -                                                                                 | None | -      | -                                                                                 | None  | -      | -                                                                                   | None  |
| Storage Length           | -      | -                                                                                 | -    | -      | -                                                                                 | -    | -      | -                                                                                 | -     | -      | -                                                                                   | -     |
| Veh in Median Storage, # | -      | 0                                                                                 | -    | -      | 0                                                                                 | -    | -      | 0                                                                                 | -     | -      | 0                                                                                   | -     |
| Grade, %                 | -      | 0                                                                                 | -    | -      | 0                                                                                 | -    | -      | 0                                                                                 | -     | -      | 0                                                                                   | -     |
| Peak Hour Factor         | 92     | 92                                                                                | 92   | 92     | 92                                                                                | 92   | 92     | 92                                                                                | 92    | 92     | 92                                                                                  | 92    |
| Heavy Vehicles, %        | 2      | 2                                                                                 | 2    | 2      | 2                                                                                 | 2    | 2      | 2                                                                                 | 2     | 2      | 2                                                                                   | 2     |
| Mvmt Flow                | 16     | 98                                                                                | 22   | 71     | 120                                                                               | 22   | 5      | 71                                                                                | 27    | 22     | 141                                                                                 | 27    |
|                          |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
| Major/Minor              | Major1 |                                                                                   |      | Major2 |                                                                                   |      | Minor1 |                                                                                   |       | Minor2 |                                                                                     |       |
| Conflicting Flow All     | 142    | 0                                                                                 | 0    | 120    | 0                                                                                 | 0    | 498    | 425                                                                               | 109   | 463    | 425                                                                                 | 131   |
| Stage 1                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 141    | 141                                                                               | -     | 273    | 273                                                                                 | -     |
| Stage 2                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 357    | 284                                                                               | -     | 190    | 152                                                                                 | -     |
| Critical Hdwy            | 4.12   | -                                                                                 | -    | 4.12   | -                                                                                 | -    | 7.12   | 6.52                                                                              | 6.22  | 7.12   | 6.52                                                                                | 6.22  |
| Critical Hdwy Stg 1      | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 6.12   | 5.52                                                                              | -     | 6.12   | 5.52                                                                                | -     |
| Critical Hdwy Stg 2      | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 6.12   | 5.52                                                                              | -     | 6.12   | 5.52                                                                                | -     |
| Follow-up Hdwy           | 2.218  | -                                                                                 | -    | 2.218  | -                                                                                 | -    | 3.518  | 4.018                                                                             | 3.318 | 3.518  | 4.018                                                                               | 3.318 |
| Pot Cap-1 Maneuver       | 1441   | -                                                                                 | -    | 1468   | -                                                                                 | -    | 483    | 521                                                                               | 945   | 509    | 521                                                                                 | 919   |
| Stage 1                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 862    | 780                                                                               | -     | 733    | 684                                                                                 | -     |
| Stage 2                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 661    | 676                                                                               | -     | 812    | 772                                                                                 | -     |
| Platoon blocked, %       |        | -                                                                                 | -    |        | -                                                                                 | -    |        |                                                                                   |       |        |                                                                                     |       |
| Mov Cap-1 Maneuver       | 1441   | -                                                                                 | -    | 1468   | -                                                                                 | -    | 347    | 488                                                                               | 945   | 418    | 488                                                                                 | 919   |
| Mov Cap-2 Maneuver       | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 347    | 488                                                                               | -     | 418    | 488                                                                                 | -     |
| Stage 1                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 852    | 771                                                                               | -     | 724    | 648                                                                                 | -     |
| Stage 2                  | -      | -                                                                                 | -    | -      | -                                                                                 | -    | 475    | 640                                                                               | -     | 708    | 763                                                                                 | -     |
|                          |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
|                          |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
| Approach                 | EB     |                                                                                   |      | WB     |                                                                                   |      | NB     |                                                                                   |       | SB     |                                                                                     |       |
| HCM Control Delay, s     | 0.9    |                                                                                   |      | 2.5    |                                                                                   |      | 13.1   |                                                                                   |       | 16.1   |                                                                                     |       |
| HCM LOS                  |        |                                                                                   |      |        |                                                                                   |      | B      |                                                                                   |       | C      |                                                                                     |       |
|                          |        |                                                                                   |      |        |                                                                                   |      |        |                                                                                   |       |        |                                                                                     |       |
| Minor Lane/Major Mvmt    | NBLn1  | EBL                                                                               | EBT  | EBR    | WBL                                                                               | WBT  | WBR    | SBLn1                                                                             |       |        |                                                                                     |       |
| Capacity (veh/h)         | 546    | 1441                                                                              | -    | -      | 1468                                                                              | -    | -      | 513                                                                               |       |        |                                                                                     |       |
| HCM Lane V/C Ratio       | 0.189  | 0.011                                                                             | -    | -      | 0.048                                                                             | -    | -      | 0.371                                                                             |       |        |                                                                                     |       |
| HCM Control Delay (s)    | 13.1   | 7.5                                                                               | 0    | -      | 7.6                                                                               | 0    | -      | 16.1                                                                              |       |        |                                                                                     |       |
| HCM Lane LOS             | B      | A                                                                                 | A    | -      | A                                                                                 | A    | -      | C                                                                                 |       |        |                                                                                     |       |
| HCM 95th %tile Q(veh)    | 0.7    | 0                                                                                 | -    | -      | 0.2                                                                               | -    | -      | 1.7                                                                               |       |        |                                                                                     |       |

Lanes, Volumes, Timings  
10: Division Rd & Road 3E

AM Peak Hour  
2027 Future Background Alt-1a

|                            |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group                 | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations        |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                    |  |                                                                                     |                                                                                     |  |                                                                                     |
| Traffic Volume (vph)       | 5                                                                                 | 30                                                                                | 10                                                                                | 35                                                                                | 25                                                                                | 25                                                                                | 5                                                                                  | 480                                                                                 | 120                                                                                 | 40                                                                                  | 315                                                                                 | 5                                                                                   |
| Future Volume (vph)        | 5                                                                                 | 30                                                                                | 10                                                                                | 35                                                                                | 25                                                                                | 25                                                                                | 5                                                                                  | 480                                                                                 | 120                                                                                 | 40                                                                                  | 315                                                                                 | 5                                                                                   |
| Ideal Flow (vphpl)         | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Lane Width (m)             | 3.7                                                                               | 3.7                                                                               | 3.7                                                                               | 3.7                                                                               | 3.7                                                                               | 3.7                                                                               | 3.7                                                                                | 3.7                                                                                 | 3.7                                                                                 | 3.7                                                                                 | 3.7                                                                                 | 3.7                                                                                 |
| Lane Util. Factor          | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Frt                        |                                                                                   | 0.970                                                                             |                                                                                   |                                                                                   | 0.960                                                                             |                                                                                   |                                                                                    | 0.973                                                                               |                                                                                     |                                                                                     | 0.998                                                                               |                                                                                     |
| Flt Protected              |                                                                                   | 0.995                                                                             |                                                                                   |                                                                                   | 0.980                                                                             |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 0.995                                                                               |                                                                                     |
| Satd. Flow (prot)          | 0                                                                                 | 1818                                                                              | 0                                                                                 | 0                                                                                 | 1772                                                                              | 0                                                                                 | 0                                                                                  | 1833                                                                                | 0                                                                                   | 0                                                                                   | 1870                                                                                | 0                                                                                   |
| Flt Permitted              |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                   | 0.843                                                                             |                                                                                   |                                                                                    | 0.997                                                                               |                                                                                     |                                                                                     | 0.892                                                                               |                                                                                     |
| Satd. Flow (perm)          | 0                                                                                 | 1736                                                                              | 0                                                                                 | 0                                                                                 | 1524                                                                              | 0                                                                                 | 0                                                                                  | 1827                                                                                | 0                                                                                   | 0                                                                                   | 1677                                                                                | 0                                                                                   |
| Right Turn on Red          |                                                                                   |                                                                                   | Yes                                                                               |                                                                                   |                                                                                   | Yes                                                                               |                                                                                    |                                                                                     | Yes                                                                                 |                                                                                     |                                                                                     | Yes                                                                                 |
| Satd. Flow (RTOR)          |                                                                                   | 11                                                                                |                                                                                   |                                                                                   | 27                                                                                |                                                                                   |                                                                                    | 30                                                                                  |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |
| Link Speed (k/h)           |                                                                                   | 60                                                                                |                                                                                   |                                                                                   | 60                                                                                |                                                                                   |                                                                                    | 60                                                                                  |                                                                                     |                                                                                     | 60                                                                                  |                                                                                     |
| Link Distance (m)          |                                                                                   | 32.0                                                                              |                                                                                   |                                                                                   | 2033.4                                                                            |                                                                                   |                                                                                    | 78.4                                                                                |                                                                                     |                                                                                     | 81.8                                                                                |                                                                                     |
| Travel Time (s)            |                                                                                   | 1.9                                                                               |                                                                                   |                                                                                   | 122.0                                                                             |                                                                                   |                                                                                    | 4.7                                                                                 |                                                                                     |                                                                                     | 4.9                                                                                 |                                                                                     |
| 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                                                                                |
| Adj. Flow (vph)            | 5                                                                                 | 33                                                                                | 11                                                                                | 38                                                                                | 27                                                                                | 27                                                                                | 5                                                                                  | 522                                                                                 | 130                                                                                 | 43                                                                                  | 342                                                                                 | 5                                                                                   |
| Shared Lane Traffic (%)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Group Flow (vph)      | 0                                                                                 | 49                                                                                | 0                                                                                 | 0                                                                                 | 92                                                                                | 0                                                                                 | 0                                                                                  | 657                                                                                 | 0                                                                                   | 0                                                                                   | 390                                                                                 | 0                                                                                   |
| Enter Blocked Intersection | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                 | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  |
| Lane Alignment             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                               | Left                                                                                | Right                                                                               | Left                                                                                | Left                                                                                | Right                                                                               |
| Median Width(m)            |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                    | 0.0                                                                                 |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |
| Link Offset(m)             |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                    | 0.0                                                                                 |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |
| Crosswalk Width(m)         |                                                                                   | 4.8                                                                               |                                                                                   |                                                                                   | 4.8                                                                               |                                                                                   |                                                                                    | 4.8                                                                                 |                                                                                     |                                                                                     | 4.8                                                                                 |                                                                                     |
| Two way Left Turn Lane     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Headway Factor             | 0.99                                                                              | 0.99                                                                              | 0.99                                                                              | 0.99                                                                              | 0.99                                                                              | 0.99                                                                              | 0.99                                                                               | 0.99                                                                                | 0.99                                                                                | 0.99                                                                                | 0.99                                                                                | 0.99                                                                                |
| Turning Speed (k/h)        | 25                                                                                |                                                                                   | 15                                                                                | 25                                                                                |                                                                                   | 15                                                                                | 25                                                                                 |                                                                                     | 15                                                                                  | 25                                                                                  |                                                                                     | 15                                                                                  |
| Turn Type                  | Perm                                                                              | NA                                                                                |                                                                                   | Perm                                                                              | NA                                                                                |                                                                                   | Perm                                                                               | NA                                                                                  |                                                                                     | Perm                                                                                | NA                                                                                  |                                                                                     |
| Protected Phases           |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                    | 2                                                                                   |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |
| Permitted Phases           | 4                                                                                 |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 2                                                                                  |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |                                                                                     |
| Detector Phase             | 4                                                                                 | 4                                                                                 |                                                                                   | 4                                                                                 | 4                                                                                 |                                                                                   | 2                                                                                  | 2                                                                                   |                                                                                     | 2                                                                                   | 2                                                                                   |                                                                                     |
| Switch Phase               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)        | 10.0                                                                              | 10.0                                                                              |                                                                                   | 10.0                                                                              | 10.0                                                                              |                                                                                   | 10.0                                                                               | 10.0                                                                                |                                                                                     | 10.0                                                                                | 10.0                                                                                |                                                                                     |
| Minimum Split (s)          | 24.0                                                                              | 24.0                                                                              |                                                                                   | 24.0                                                                              | 24.0                                                                              |                                                                                   | 24.0                                                                               | 24.0                                                                                |                                                                                     | 24.0                                                                                | 24.0                                                                                |                                                                                     |
| Total Split (s)            | 24.0                                                                              | 24.0                                                                              |                                                                                   | 24.0                                                                              | 24.0                                                                              |                                                                                   | 36.0                                                                               | 36.0                                                                                |                                                                                     | 36.0                                                                                | 36.0                                                                                |                                                                                     |
| Total Split (%)            | 40.0%                                                                             | 40.0%                                                                             |                                                                                   | 40.0%                                                                             | 40.0%                                                                             |                                                                                   | 60.0%                                                                              | 60.0%                                                                               |                                                                                     | 60.0%                                                                               | 60.0%                                                                               |                                                                                     |
| Maximum Green (s)          | 18.0                                                                              | 18.0                                                                              |                                                                                   | 18.0                                                                              | 18.0                                                                              |                                                                                   | 30.0                                                                               | 30.0                                                                                |                                                                                     | 30.0                                                                                | 30.0                                                                                |                                                                                     |
| Yellow Time (s)            | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                                | 4.0                                                                                 |                                                                                     | 4.0                                                                                 | 4.0                                                                                 |                                                                                     |
| All-Red Time (s)           | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0                                                                                | 2.0                                                                                 |                                                                                     | 2.0                                                                                 | 2.0                                                                                 |                                                                                     |
| Lost Time Adjust (s)       |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                    | 0.0                                                                                 |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |
| Total Lost Time (s)        |                                                                                   | 6.0                                                                               |                                                                                   |                                                                                   | 6.0                                                                               |                                                                                   |                                                                                    | 6.0                                                                                 |                                                                                     |                                                                                     | 6.0                                                                                 |                                                                                     |
| Lead/Lag                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lead-Lag Optimize?         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Vehicle Extension (s)      | 3.0                                                                               | 3.0                                                                               |                                                                                   | 3.0                                                                               | 3.0                                                                               |                                                                                   | 3.0                                                                                | 3.0                                                                                 |                                                                                     | 3.0                                                                                 | 3.0                                                                                 |                                                                                     |
| Recall Mode                | None                                                                              | None                                                                              |                                                                                   | None                                                                              | None                                                                              |                                                                                   | None                                                                               | None                                                                                |                                                                                     | None                                                                                | None                                                                                |                                                                                     |
| Walk Time (s)              | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                                | 7.0                                                                                 |                                                                                     | 7.0                                                                                 | 7.0                                                                                 |                                                                                     |
| Flash Dont Walk (s)        | 11.0                                                                              | 11.0                                                                              |                                                                                   | 11.0                                                                              | 11.0                                                                              |                                                                                   | 11.0                                                                               | 11.0                                                                                |                                                                                     | 11.0                                                                                | 11.0                                                                                |                                                                                     |
| Pedestrian Calls (#/hr)    | 5                                                                                 | 5                                                                                 |                                                                                   | 5                                                                                 | 5                                                                                 |                                                                                   | 5                                                                                  | 5                                                                                   |                                                                                     | 5                                                                                   | 5                                                                                   |                                                                                     |

Lanes, Volumes, Timings  
10: Division Rd & Road 3E

AM Peak Hour  
2027 Future Background Alt-1a

|                        |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group             | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Act Effect Green (s)   |                                                                                   | 16.5                                                                              |                                                                                   |                                                                                   | 16.5                                                                              |                                                                                   |                                                                                    | 26.5                                                                                |                                                                                     |                                                                                     | 26.5                                                                                |                                                                                     |
| Actuated g/C Ratio     |                                                                                   | 0.44                                                                              |                                                                                   |                                                                                   | 0.44                                                                              |                                                                                   |                                                                                    | 0.70                                                                                |                                                                                     |                                                                                     | 0.70                                                                                |                                                                                     |
| v/c Ratio              |                                                                                   | 0.06                                                                              |                                                                                   |                                                                                   | 0.13                                                                              |                                                                                   |                                                                                    | 0.51                                                                                |                                                                                     |                                                                                     | 0.33                                                                                |                                                                                     |
| Control Delay          |                                                                                   | 12.6                                                                              |                                                                                   |                                                                                   | 11.9                                                                              |                                                                                   |                                                                                    | 9.2                                                                                 |                                                                                     |                                                                                     | 7.6                                                                                 |                                                                                     |
| Queue Delay            |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                    | 0.0                                                                                 |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |
| Total Delay            |                                                                                   | 12.6                                                                              |                                                                                   |                                                                                   | 11.9                                                                              |                                                                                   |                                                                                    | 9.2                                                                                 |                                                                                     |                                                                                     | 7.6                                                                                 |                                                                                     |
| LOS                    |                                                                                   | B                                                                                 |                                                                                   |                                                                                   | B                                                                                 |                                                                                   |                                                                                    | A                                                                                   |                                                                                     |                                                                                     | A                                                                                   |                                                                                     |
| Approach Delay         |                                                                                   | 12.6                                                                              |                                                                                   |                                                                                   | 11.9                                                                              |                                                                                   |                                                                                    | 9.2                                                                                 |                                                                                     |                                                                                     | 7.6                                                                                 |                                                                                     |
| Approach LOS           |                                                                                   | B                                                                                 |                                                                                   |                                                                                   | B                                                                                 |                                                                                   |                                                                                    | A                                                                                   |                                                                                     |                                                                                     | A                                                                                   |                                                                                     |
| Queue Length 50th (m)  |                                                                                   | 2.3                                                                               |                                                                                   |                                                                                   | 4.0                                                                               |                                                                                   |                                                                                    | 34.2                                                                                |                                                                                     |                                                                                     | 18.0                                                                                |                                                                                     |
| Queue Length 95th (m)  |                                                                                   | 9.7                                                                               |                                                                                   |                                                                                   | 14.9                                                                              |                                                                                   |                                                                                    | 87.9                                                                                |                                                                                     |                                                                                     | 46.9                                                                                |                                                                                     |
| Internal Link Dist (m) |                                                                                   | 8.0                                                                               |                                                                                   |                                                                                   | 2009.4                                                                            |                                                                                   |                                                                                    | 54.4                                                                                |                                                                                     |                                                                                     | 57.8                                                                                |                                                                                     |
| Turn Bay Length (m)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Base Capacity (vph)    |                                                                                   | 1012                                                                              |                                                                                   |                                                                                   | 896                                                                               |                                                                                   |                                                                                    | 1409                                                                                |                                                                                     |                                                                                     | 1288                                                                                |                                                                                     |
| Starvation Cap Reductn |                                                                                   | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |                                                                                    | 0                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Spillback Cap Reductn  |                                                                                   | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |                                                                                    | 0                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Storage Cap Reductn    |                                                                                   | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |                                                                                    | 0                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Reduced v/c Ratio      |                                                                                   | 0.05                                                                              |                                                                                   |                                                                                   | 0.10                                                                              |                                                                                   |                                                                                    | 0.47                                                                                |                                                                                     |                                                                                     | 0.30                                                                                |                                                                                     |

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 37.7

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.51

Intersection Signal Delay: 9.0

Intersection LOS: A

Intersection Capacity Utilization 65.8%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 10: Division Rd & Road 3E



Lanes, Volumes, Timings  
10: Division Rd & Road 3E

PM Peak Hour  
2027 Future Background Alt-1a

|                            |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group                 | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations        |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                    |  |                                                                                     |                                                                                     |  |                                                                                     |
| Traffic Volume (vph)       | 10                                                                                | 25                                                                                | 15                                                                                | 50                                                                                | 55                                                                                | 30                                                                                | 15                                                                                 | 360                                                                                 | 25                                                                                  | 20                                                                                  | 520                                                                                 | 5                                                                                   |
| Future Volume (vph)        | 10                                                                                | 25                                                                                | 15                                                                                | 50                                                                                | 55                                                                                | 30                                                                                | 15                                                                                 | 360                                                                                 | 25                                                                                  | 20                                                                                  | 520                                                                                 | 5                                                                                   |
| Ideal Flow (vphpl)         | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Lane Width (m)             | 3.7                                                                               | 3.7                                                                               | 3.7                                                                               | 3.7                                                                               | 3.7                                                                               | 3.7                                                                               | 3.7                                                                                | 3.7                                                                                 | 3.7                                                                                 | 3.7                                                                                 | 3.7                                                                                 | 3.7                                                                                 |
| Lane Util. Factor          | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Frt                        |                                                                                   | 0.960                                                                             |                                                                                   |                                                                                   | 0.970                                                                             |                                                                                   |                                                                                    | 0.992                                                                               |                                                                                     |                                                                                     | 0.999                                                                               |                                                                                     |
| Flt Protected              |                                                                                   | 0.990                                                                             |                                                                                   |                                                                                   | 0.982                                                                             |                                                                                   |                                                                                    | 0.998                                                                               |                                                                                     |                                                                                     | 0.998                                                                               |                                                                                     |
| Satd. Flow (prot)          | 0                                                                                 | 1790                                                                              | 0                                                                                 | 0                                                                                 | 1794                                                                              | 0                                                                                 | 0                                                                                  | 1865                                                                                | 0                                                                                   | 0                                                                                   | 1878                                                                                | 0                                                                                   |
| Flt Permitted              |                                                                                   | 0.899                                                                             |                                                                                   |                                                                                   | 0.856                                                                             |                                                                                   |                                                                                    | 0.971                                                                               |                                                                                     |                                                                                     | 0.975                                                                               |                                                                                     |
| Satd. Flow (perm)          | 0                                                                                 | 1625                                                                              | 0                                                                                 | 0                                                                                 | 1564                                                                              | 0                                                                                 | 0                                                                                  | 1814                                                                                | 0                                                                                   | 0                                                                                   | 1835                                                                                | 0                                                                                   |
| Right Turn on Red          |                                                                                   |                                                                                   | Yes                                                                               |                                                                                   |                                                                                   | Yes                                                                               |                                                                                    |                                                                                     | Yes                                                                                 |                                                                                     |                                                                                     | Yes                                                                                 |
| Satd. Flow (RTOR)          |                                                                                   | 16                                                                                |                                                                                   |                                                                                   | 25                                                                                |                                                                                   |                                                                                    | 8                                                                                   |                                                                                     |                                                                                     | 1                                                                                   |                                                                                     |
| Link Speed (k/h)           |                                                                                   | 60                                                                                |                                                                                   |                                                                                   | 60                                                                                |                                                                                   |                                                                                    | 60                                                                                  |                                                                                     |                                                                                     | 60                                                                                  |                                                                                     |
| Link Distance (m)          |                                                                                   | 32.0                                                                              |                                                                                   |                                                                                   | 2033.4                                                                            |                                                                                   |                                                                                    | 78.4                                                                                |                                                                                     |                                                                                     | 81.8                                                                                |                                                                                     |
| Travel Time (s)            |                                                                                   | 1.9                                                                               |                                                                                   |                                                                                   | 122.0                                                                             |                                                                                   |                                                                                    | 4.7                                                                                 |                                                                                     |                                                                                     | 4.9                                                                                 |                                                                                     |
| 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                                                                                |
| Adj. Flow (vph)            | 11                                                                                | 27                                                                                | 16                                                                                | 54                                                                                | 60                                                                                | 33                                                                                | 16                                                                                 | 391                                                                                 | 27                                                                                  | 22                                                                                  | 565                                                                                 | 5                                                                                   |
| Shared Lane Traffic (%)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Group Flow (vph)      | 0                                                                                 | 54                                                                                | 0                                                                                 | 0                                                                                 | 147                                                                               | 0                                                                                 | 0                                                                                  | 434                                                                                 | 0                                                                                   | 0                                                                                   | 592                                                                                 | 0                                                                                   |
| Enter Blocked Intersection | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                 | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  |
| Lane Alignment             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                               | Left                                                                                | Right                                                                               | Left                                                                                | Left                                                                                | Right                                                                               |
| Median Width(m)            |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                    | 0.0                                                                                 |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |
| Link Offset(m)             |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                    | 0.0                                                                                 |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |
| Crosswalk Width(m)         |                                                                                   | 4.8                                                                               |                                                                                   |                                                                                   | 4.8                                                                               |                                                                                   |                                                                                    | 4.8                                                                                 |                                                                                     |                                                                                     | 4.8                                                                                 |                                                                                     |
| Two way Left Turn Lane     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Headway Factor             | 0.99                                                                              | 0.99                                                                              | 0.99                                                                              | 0.99                                                                              | 0.99                                                                              | 0.99                                                                              | 0.99                                                                               | 0.99                                                                                | 0.99                                                                                | 0.99                                                                                | 0.99                                                                                | 0.99                                                                                |
| Turning Speed (k/h)        | 25                                                                                |                                                                                   | 15                                                                                | 25                                                                                |                                                                                   | 15                                                                                | 25                                                                                 |                                                                                     | 15                                                                                  | 25                                                                                  |                                                                                     | 15                                                                                  |
| Turn Type                  | Perm                                                                              | NA                                                                                |                                                                                   | Perm                                                                              | NA                                                                                |                                                                                   | Perm                                                                               | NA                                                                                  |                                                                                     | Perm                                                                                | NA                                                                                  |                                                                                     |
| Protected Phases           |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                    | 2                                                                                   |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |
| Permitted Phases           | 4                                                                                 |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 2                                                                                  |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |                                                                                     |
| Detector Phase             | 4                                                                                 | 4                                                                                 |                                                                                   | 4                                                                                 | 4                                                                                 |                                                                                   | 2                                                                                  | 2                                                                                   |                                                                                     | 2                                                                                   | 2                                                                                   |                                                                                     |
| Switch Phase               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)        | 10.0                                                                              | 10.0                                                                              |                                                                                   | 10.0                                                                              | 10.0                                                                              |                                                                                   | 10.0                                                                               | 10.0                                                                                |                                                                                     | 10.0                                                                                | 10.0                                                                                |                                                                                     |
| Minimum Split (s)          | 24.0                                                                              | 24.0                                                                              |                                                                                   | 24.0                                                                              | 24.0                                                                              |                                                                                   | 24.0                                                                               | 24.0                                                                                |                                                                                     | 24.0                                                                                | 24.0                                                                                |                                                                                     |
| Total Split (s)            | 24.0                                                                              | 24.0                                                                              |                                                                                   | 24.0                                                                              | 24.0                                                                              |                                                                                   | 36.0                                                                               | 36.0                                                                                |                                                                                     | 36.0                                                                                | 36.0                                                                                |                                                                                     |
| Total Split (%)            | 40.0%                                                                             | 40.0%                                                                             |                                                                                   | 40.0%                                                                             | 40.0%                                                                             |                                                                                   | 60.0%                                                                              | 60.0%                                                                               |                                                                                     | 60.0%                                                                               | 60.0%                                                                               |                                                                                     |
| Maximum Green (s)          | 18.0                                                                              | 18.0                                                                              |                                                                                   | 18.0                                                                              | 18.0                                                                              |                                                                                   | 30.0                                                                               | 30.0                                                                                |                                                                                     | 30.0                                                                                | 30.0                                                                                |                                                                                     |
| Yellow Time (s)            | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                                | 4.0                                                                                 |                                                                                     | 4.0                                                                                 | 4.0                                                                                 |                                                                                     |
| All-Red Time (s)           | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0                                                                                | 2.0                                                                                 |                                                                                     | 2.0                                                                                 | 2.0                                                                                 |                                                                                     |
| Lost Time Adjust (s)       |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                    | 0.0                                                                                 |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |
| Total Lost Time (s)        |                                                                                   | 6.0                                                                               |                                                                                   |                                                                                   | 6.0                                                                               |                                                                                   |                                                                                    | 6.0                                                                                 |                                                                                     |                                                                                     | 6.0                                                                                 |                                                                                     |
| Lead/Lag                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lead-Lag Optimize?         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Vehicle Extension (s)      | 3.0                                                                               | 3.0                                                                               |                                                                                   | 3.0                                                                               | 3.0                                                                               |                                                                                   | 3.0                                                                                | 3.0                                                                                 |                                                                                     | 3.0                                                                                 | 3.0                                                                                 |                                                                                     |
| Recall Mode                | None                                                                              | None                                                                              |                                                                                   | None                                                                              | None                                                                              |                                                                                   | None                                                                               | None                                                                                |                                                                                     | None                                                                                | None                                                                                |                                                                                     |
| Walk Time (s)              | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                                | 7.0                                                                                 |                                                                                     | 7.0                                                                                 | 7.0                                                                                 |                                                                                     |
| Flash Dont Walk (s)        | 11.0                                                                              | 11.0                                                                              |                                                                                   | 11.0                                                                              | 11.0                                                                              |                                                                                   | 11.0                                                                               | 11.0                                                                                |                                                                                     | 11.0                                                                                | 11.0                                                                                |                                                                                     |
| Pedestrian Calls (#/hr)    | 5                                                                                 | 5                                                                                 |                                                                                   | 5                                                                                 | 5                                                                                 |                                                                                   | 5                                                                                  | 5                                                                                   |                                                                                     | 5                                                                                   | 5                                                                                   |                                                                                     |

Lanes, Volumes, Timings  
10: Division Rd & Road 3E

PM Peak Hour  
2027 Future Background Alt-1a

|                        |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group             | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Act Effect Green (s)   |                                                                                   | 16.4                                                                              |                                                                                   |                                                                                   | 16.4                                                                              |                                                                                   |                                                                                    | 23.2                                                                                |                                                                                     |                                                                                     | 23.2                                                                                |                                                                                     |
| Actuated g/C Ratio     |                                                                                   | 0.41                                                                              |                                                                                   |                                                                                   | 0.41                                                                              |                                                                                   |                                                                                    | 0.58                                                                                |                                                                                     |                                                                                     | 0.58                                                                                |                                                                                     |
| v/c Ratio              |                                                                                   | 0.08                                                                              |                                                                                   |                                                                                   | 0.23                                                                              |                                                                                   |                                                                                    | 0.41                                                                                |                                                                                     |                                                                                     | 0.56                                                                                |                                                                                     |
| Control Delay          |                                                                                   | 11.6                                                                              |                                                                                   |                                                                                   | 13.9                                                                              |                                                                                   |                                                                                    | 9.3                                                                                 |                                                                                     |                                                                                     | 11.4                                                                                |                                                                                     |
| Queue Delay            |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                    | 0.0                                                                                 |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |
| Total Delay            |                                                                                   | 11.6                                                                              |                                                                                   |                                                                                   | 13.9                                                                              |                                                                                   |                                                                                    | 9.3                                                                                 |                                                                                     |                                                                                     | 11.4                                                                                |                                                                                     |
| LOS                    |                                                                                   | B                                                                                 |                                                                                   |                                                                                   | B                                                                                 |                                                                                   |                                                                                    | A                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |
| Approach Delay         |                                                                                   | 11.6                                                                              |                                                                                   |                                                                                   | 13.9                                                                              |                                                                                   |                                                                                    | 9.3                                                                                 |                                                                                     |                                                                                     | 11.4                                                                                |                                                                                     |
| Approach LOS           |                                                                                   | B                                                                                 |                                                                                   |                                                                                   | B                                                                                 |                                                                                   |                                                                                    | A                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |
| Queue Length 50th (m)  |                                                                                   | 2.2                                                                               |                                                                                   |                                                                                   | 7.4                                                                               |                                                                                   |                                                                                    | 19.8                                                                                |                                                                                     |                                                                                     | 31.1                                                                                |                                                                                     |
| Queue Length 95th (m)  |                                                                                   | 10.1                                                                              |                                                                                   |                                                                                   | 23.4                                                                              |                                                                                   |                                                                                    | 50.7                                                                                |                                                                                     |                                                                                     | 77.6                                                                                |                                                                                     |
| Internal Link Dist (m) |                                                                                   | 8.0                                                                               |                                                                                   |                                                                                   | 2009.4                                                                            |                                                                                   |                                                                                    | 54.4                                                                                |                                                                                     |                                                                                     | 57.8                                                                                |                                                                                     |
| Turn Bay Length (m)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Base Capacity (vph)    |                                                                                   | 855                                                                               |                                                                                   |                                                                                   | 827                                                                               |                                                                                   |                                                                                    | 1337                                                                                |                                                                                     |                                                                                     | 1351                                                                                |                                                                                     |
| Starvation Cap Reductn |                                                                                   | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |                                                                                    | 0                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Spillback Cap Reductn  |                                                                                   | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |                                                                                    | 0                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Storage Cap Reductn    |                                                                                   | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |                                                                                    | 0                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Reduced v/c Ratio      |                                                                                   | 0.06                                                                              |                                                                                   |                                                                                   | 0.18                                                                              |                                                                                   |                                                                                    | 0.32                                                                                |                                                                                     |                                                                                     | 0.44                                                                                |                                                                                     |

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 40.2

Natural Cycle: 55

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.56

Intersection Signal Delay: 11.0

Intersection LOS: B

Intersection Capacity Utilization 58.7%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 10: Division Rd & Road 3E



Lanes, Volumes, Timings  
10: Division Rd & Road 3E

AM Peak Hour  
2027 Future Background Alt-1b

|                            |  |  |  |  |  |  |   |  |  |  |  |  |
|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group                 | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations        |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |  |  |                                                                                     |  |  |                                                                                     |
| Traffic Volume (vph)       | 5                                                                                 | 30                                                                                | 10                                                                                | 35                                                                                | 25                                                                                | 25                                                                                | 5                                                                                   | 480                                                                                 | 120                                                                                 | 40                                                                                  | 315                                                                                 | 5                                                                                   |
| Future Volume (vph)        | 5                                                                                 | 30                                                                                | 10                                                                                | 35                                                                                | 25                                                                                | 25                                                                                | 5                                                                                   | 480                                                                                 | 120                                                                                 | 40                                                                                  | 315                                                                                 | 5                                                                                   |
| Ideal Flow (vphpl)         | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Lane Width (m)             | 3.7                                                                               | 3.7                                                                               | 3.7                                                                               | 3.7                                                                               | 3.7                                                                               | 3.7                                                                               | 3.7                                                                                 | 3.7                                                                                 | 3.7                                                                                 | 3.7                                                                                 | 3.7                                                                                 | 3.7                                                                                 |
| Lane Util. Factor          | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Frt                        |                                                                                   | 0.970                                                                             |                                                                                   |                                                                                   | 0.960                                                                             |                                                                                   |                                                                                     | 0.970                                                                               |                                                                                     |                                                                                     | 0.998                                                                               |                                                                                     |
| Flt Protected              |                                                                                   | 0.995                                                                             |                                                                                   |                                                                                   | 0.980                                                                             |                                                                                   | 0.950                                                                               |                                                                                     |                                                                                     | 0.950                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (prot)          | 0                                                                                 | 1818                                                                              | 0                                                                                 | 0                                                                                 | 1772                                                                              | 0                                                                                 | 1789                                                                                | 1827                                                                                | 0                                                                                   | 1789                                                                                | 1880                                                                                | 0                                                                                   |
| Flt Permitted              |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                   | 0.843                                                                             |                                                                                   | 0.553                                                                               |                                                                                     |                                                                                     | 0.340                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (perm)          | 0                                                                                 | 1736                                                                              | 0                                                                                 | 0                                                                                 | 1524                                                                              | 0                                                                                 | 1042                                                                                | 1827                                                                                | 0                                                                                   | 640                                                                                 | 1880                                                                                | 0                                                                                   |
| Right Turn on Red          |                                                                                   |                                                                                   | Yes                                                                               |                                                                                   |                                                                                   | Yes                                                                               |                                                                                     |                                                                                     | Yes                                                                                 |                                                                                     |                                                                                     | Yes                                                                                 |
| Satd. Flow (RTOR)          |                                                                                   | 11                                                                                |                                                                                   |                                                                                   | 27                                                                                |                                                                                   |                                                                                     | 30                                                                                  |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |
| Link Speed (k/h)           |                                                                                   | 60                                                                                |                                                                                   |                                                                                   | 60                                                                                |                                                                                   |                                                                                     | 60                                                                                  |                                                                                     |                                                                                     | 60                                                                                  |                                                                                     |
| Link Distance (m)          |                                                                                   | 32.0                                                                              |                                                                                   |                                                                                   | 2033.4                                                                            |                                                                                   |                                                                                     | 78.4                                                                                |                                                                                     |                                                                                     | 81.8                                                                                |                                                                                     |
| Travel Time (s)            |                                                                                   | 1.9                                                                               |                                                                                   |                                                                                   | 122.0                                                                             |                                                                                   |                                                                                     | 4.7                                                                                 |                                                                                     |                                                                                     | 4.9                                                                                 |                                                                                     |
| 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                                                                                |
| Adj. Flow (vph)            | 5                                                                                 | 33                                                                                | 11                                                                                | 38                                                                                | 27                                                                                | 27                                                                                | 5                                                                                   | 522                                                                                 | 130                                                                                 | 43                                                                                  | 342                                                                                 | 5                                                                                   |
| Shared Lane Traffic (%)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Group Flow (vph)      | 0                                                                                 | 49                                                                                | 0                                                                                 | 0                                                                                 | 92                                                                                | 0                                                                                 | 5                                                                                   | 652                                                                                 | 0                                                                                   | 43                                                                                  | 347                                                                                 | 0                                                                                   |
| Enter Blocked Intersection | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  |
| Lane Alignment             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                                | Left                                                                                | Right                                                                               | Left                                                                                | Left                                                                                | Right                                                                               |
| Median Width(m)            |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                     | 3.7                                                                                 |                                                                                     |                                                                                     | 3.7                                                                                 |                                                                                     |
| Link Offset(m)             |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                     | 0.0                                                                                 |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |
| Crosswalk Width(m)         |                                                                                   | 4.8                                                                               |                                                                                   |                                                                                   | 4.8                                                                               |                                                                                   |                                                                                     | 4.8                                                                                 |                                                                                     |                                                                                     | 4.8                                                                                 |                                                                                     |
| Two way Left Turn Lane     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Headway Factor             | 0.99                                                                              | 0.99                                                                              | 0.99                                                                              | 0.99                                                                              | 0.99                                                                              | 0.99                                                                              | 0.99                                                                                | 0.99                                                                                | 0.99                                                                                | 0.99                                                                                | 0.99                                                                                | 0.99                                                                                |
| Turning Speed (k/h)        | 25                                                                                |                                                                                   | 15                                                                                | 25                                                                                |                                                                                   | 15                                                                                | 25                                                                                  |                                                                                     | 15                                                                                  | 25                                                                                  |                                                                                     | 15                                                                                  |
| Turn Type                  | Perm                                                                              | NA                                                                                |                                                                                   | Perm                                                                              | NA                                                                                |                                                                                   | Perm                                                                                | NA                                                                                  |                                                                                     | Perm                                                                                | NA                                                                                  |                                                                                     |
| Protected Phases           |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                     | 2                                                                                   |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |
| Permitted Phases           | 4                                                                                 |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 2                                                                                   |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |                                                                                     |
| Detector Phase             | 4                                                                                 | 4                                                                                 |                                                                                   | 4                                                                                 | 4                                                                                 |                                                                                   | 2                                                                                   | 2                                                                                   |                                                                                     | 2                                                                                   | 2                                                                                   |                                                                                     |
| Switch Phase               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)        | 10.0                                                                              | 10.0                                                                              |                                                                                   | 10.0                                                                              | 10.0                                                                              |                                                                                   | 10.0                                                                                | 10.0                                                                                |                                                                                     | 10.0                                                                                | 10.0                                                                                |                                                                                     |
| Minimum Split (s)          | 24.0                                                                              | 24.0                                                                              |                                                                                   | 24.0                                                                              | 24.0                                                                              |                                                                                   | 24.0                                                                                | 24.0                                                                                |                                                                                     | 24.0                                                                                | 24.0                                                                                |                                                                                     |
| Total Split (s)            | 24.0                                                                              | 24.0                                                                              |                                                                                   | 24.0                                                                              | 24.0                                                                              |                                                                                   | 36.0                                                                                | 36.0                                                                                |                                                                                     | 36.0                                                                                | 36.0                                                                                |                                                                                     |
| Total Split (%)            | 40.0%                                                                             | 40.0%                                                                             |                                                                                   | 40.0%                                                                             | 40.0%                                                                             |                                                                                   | 60.0%                                                                               | 60.0%                                                                               |                                                                                     | 60.0%                                                                               | 60.0%                                                                               |                                                                                     |
| Maximum Green (s)          | 18.0                                                                              | 18.0                                                                              |                                                                                   | 18.0                                                                              | 18.0                                                                              |                                                                                   | 30.0                                                                                | 30.0                                                                                |                                                                                     | 30.0                                                                                | 30.0                                                                                |                                                                                     |
| Yellow Time (s)            | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                                 | 4.0                                                                                 |                                                                                     | 4.0                                                                                 | 4.0                                                                                 |                                                                                     |
| All-Red Time (s)           | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0                                                                                 | 2.0                                                                                 |                                                                                     | 2.0                                                                                 | 2.0                                                                                 |                                                                                     |
| Lost Time Adjust (s)       |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |
| Total Lost Time (s)        |                                                                                   | 6.0                                                                               |                                                                                   |                                                                                   | 6.0                                                                               |                                                                                   | 6.0                                                                                 | 6.0                                                                                 |                                                                                     | 6.0                                                                                 | 6.0                                                                                 |                                                                                     |
| Lead/Lag                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lead-Lag Optimize?         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Vehicle Extension (s)      | 3.0                                                                               | 3.0                                                                               |                                                                                   | 3.0                                                                               | 3.0                                                                               |                                                                                   | 3.0                                                                                 | 3.0                                                                                 |                                                                                     | 3.0                                                                                 | 3.0                                                                                 |                                                                                     |
| Recall Mode                | None                                                                              | None                                                                              |                                                                                   | None                                                                              | None                                                                              |                                                                                   | None                                                                                | None                                                                                |                                                                                     | None                                                                                | None                                                                                |                                                                                     |
| Walk Time (s)              | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                                 | 7.0                                                                                 |                                                                                     | 7.0                                                                                 | 7.0                                                                                 |                                                                                     |
| Flash Dont Walk (s)        | 11.0                                                                              | 11.0                                                                              |                                                                                   | 11.0                                                                              | 11.0                                                                              |                                                                                   | 11.0                                                                                | 11.0                                                                                |                                                                                     | 11.0                                                                                | 11.0                                                                                |                                                                                     |
| Pedestrian Calls (#/hr)    | 5                                                                                 | 5                                                                                 |                                                                                   | 5                                                                                 | 5                                                                                 |                                                                                   | 5                                                                                   | 5                                                                                   |                                                                                     | 5                                                                                   | 5                                                                                   |                                                                                     |

Lanes, Volumes, Timings  
10: Division Rd & Road 3E

AM Peak Hour  
2027 Future Background Alt-1b

|                        |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group             | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Act Effect Green (s)   |                                                                                   | 16.5                                                                              |                                                                                   |                                                                                   | 16.5                                                                              |                                                                                   | 26.4                                                                               | 26.4                                                                                |                                                                                     | 26.4                                                                                | 26.4                                                                                |                                                                                     |
| Actuated g/C Ratio     |                                                                                   | 0.44                                                                              |                                                                                   |                                                                                   | 0.44                                                                              |                                                                                   | 0.70                                                                               | 0.70                                                                                |                                                                                     | 0.70                                                                                | 0.70                                                                                |                                                                                     |
| v/c Ratio              |                                                                                   | 0.06                                                                              |                                                                                   |                                                                                   | 0.13                                                                              |                                                                                   | 0.01                                                                               | 0.50                                                                                |                                                                                     | 0.10                                                                                | 0.26                                                                                |                                                                                     |
| Control Delay          |                                                                                   | 12.5                                                                              |                                                                                   |                                                                                   | 11.8                                                                              |                                                                                   | 6.6                                                                                | 9.1                                                                                 |                                                                                     | 7.5                                                                                 | 6.9                                                                                 |                                                                                     |
| Queue Delay            |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                                | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |
| Total Delay            |                                                                                   | 12.5                                                                              |                                                                                   |                                                                                   | 11.8                                                                              |                                                                                   | 6.6                                                                                | 9.1                                                                                 |                                                                                     | 7.5                                                                                 | 6.9                                                                                 |                                                                                     |
| LOS                    |                                                                                   | B                                                                                 |                                                                                   |                                                                                   | B                                                                                 |                                                                                   | A                                                                                  | A                                                                                   |                                                                                     | A                                                                                   | A                                                                                   |                                                                                     |
| Approach Delay         |                                                                                   | 12.5                                                                              |                                                                                   |                                                                                   | 11.8                                                                              |                                                                                   |                                                                                    | 9.1                                                                                 |                                                                                     |                                                                                     | 7.0                                                                                 |                                                                                     |
| Approach LOS           |                                                                                   | B                                                                                 |                                                                                   |                                                                                   | B                                                                                 |                                                                                   |                                                                                    | A                                                                                   |                                                                                     |                                                                                     | A                                                                                   |                                                                                     |
| Queue Length 50th (m)  |                                                                                   | 2.3                                                                               |                                                                                   |                                                                                   | 4.0                                                                               |                                                                                   | 0.2                                                                                | 33.8                                                                                |                                                                                     | 1.6                                                                                 | 15.1                                                                                |                                                                                     |
| Queue Length 95th (m)  |                                                                                   | 9.7                                                                               |                                                                                   |                                                                                   | 14.9                                                                              |                                                                                   | 1.7                                                                                | 86.6                                                                                |                                                                                     | 7.4                                                                                 | 38.9                                                                                |                                                                                     |
| Internal Link Dist (m) |                                                                                   | 8.0                                                                               |                                                                                   |                                                                                   | 2009.4                                                                            |                                                                                   |                                                                                    | 54.4                                                                                |                                                                                     |                                                                                     | 57.8                                                                                |                                                                                     |
| Turn Bay Length (m)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Base Capacity (vph)    |                                                                                   | 1015                                                                              |                                                                                   |                                                                                   | 898                                                                               |                                                                                   | 801                                                                                | 1411                                                                                |                                                                                     | 492                                                                                 | 1446                                                                                |                                                                                     |
| 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      |                                                                                   | 0.05                                                                              |                                                                                   |                                                                                   | 0.10                                                                              |                                                                                   | 0.01                                                                               | 0.46                                                                                |                                                                                     | 0.09                                                                                | 0.24                                                                                |                                                                                     |

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 37.6

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.50

Intersection Signal Delay: 8.8

Intersection LOS: A

Intersection Capacity Utilization 54.7%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 10: Division Rd & Road 3E



Lanes, Volumes, Timings  
10: Division Rd & Road 3E

PM Peak Hour  
2027 Future Background Alt-1b

|                            |  |  |  |  |  |  |   |  |  |  |  |  |
|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group                 | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations        |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |  |  |                                                                                     |  |  |                                                                                     |
| Traffic Volume (vph)       | 10                                                                                | 25                                                                                | 15                                                                                | 50                                                                                | 55                                                                                | 30                                                                                | 15                                                                                  | 360                                                                                 | 25                                                                                  | 20                                                                                  | 520                                                                                 | 5                                                                                   |
| Future Volume (vph)        | 10                                                                                | 25                                                                                | 15                                                                                | 50                                                                                | 55                                                                                | 30                                                                                | 15                                                                                  | 360                                                                                 | 25                                                                                  | 20                                                                                  | 520                                                                                 | 5                                                                                   |
| Ideal Flow (vphpl)         | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Lane Width (m)             | 3.7                                                                               | 3.7                                                                               | 3.7                                                                               | 3.7                                                                               | 3.7                                                                               | 3.7                                                                               | 3.7                                                                                 | 3.7                                                                                 | 3.7                                                                                 | 3.7                                                                                 | 3.7                                                                                 | 3.7                                                                                 |
| Lane Util. Factor          | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Frt                        |                                                                                   | 0.960                                                                             |                                                                                   |                                                                                   | 0.970                                                                             |                                                                                   |                                                                                     | 0.990                                                                               |                                                                                     |                                                                                     | 0.999                                                                               |                                                                                     |
| Flt Protected              |                                                                                   | 0.990                                                                             |                                                                                   |                                                                                   | 0.982                                                                             |                                                                                   | 0.950                                                                               |                                                                                     |                                                                                     | 0.950                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (prot)          | 0                                                                                 | 1790                                                                              | 0                                                                                 | 0                                                                                 | 1794                                                                              | 0                                                                                 | 1789                                                                                | 1865                                                                                | 0                                                                                   | 1789                                                                                | 1882                                                                                | 0                                                                                   |
| Flt Permitted              |                                                                                   | 0.898                                                                             |                                                                                   |                                                                                   | 0.856                                                                             |                                                                                   | 0.372                                                                               |                                                                                     |                                                                                     | 0.514                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (perm)          | 0                                                                                 | 1624                                                                              | 0                                                                                 | 0                                                                                 | 1564                                                                              | 0                                                                                 | 701                                                                                 | 1865                                                                                | 0                                                                                   | 968                                                                                 | 1882                                                                                | 0                                                                                   |
| Right Turn on Red          |                                                                                   |                                                                                   | Yes                                                                               |                                                                                   |                                                                                   | Yes                                                                               |                                                                                     |                                                                                     | Yes                                                                                 |                                                                                     |                                                                                     | Yes                                                                                 |
| Satd. Flow (RTOR)          |                                                                                   | 16                                                                                |                                                                                   |                                                                                   | 25                                                                                |                                                                                   |                                                                                     | 8                                                                                   |                                                                                     |                                                                                     | 1                                                                                   |                                                                                     |
| Link Speed (k/h)           |                                                                                   | 60                                                                                |                                                                                   |                                                                                   | 60                                                                                |                                                                                   |                                                                                     | 60                                                                                  |                                                                                     |                                                                                     | 60                                                                                  |                                                                                     |
| Link Distance (m)          |                                                                                   | 32.0                                                                              |                                                                                   |                                                                                   | 2033.4                                                                            |                                                                                   |                                                                                     | 78.4                                                                                |                                                                                     |                                                                                     | 81.8                                                                                |                                                                                     |
| Travel Time (s)            |                                                                                   | 1.9                                                                               |                                                                                   |                                                                                   | 122.0                                                                             |                                                                                   |                                                                                     | 4.7                                                                                 |                                                                                     |                                                                                     | 4.9                                                                                 |                                                                                     |
| 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                                                                                |
| Adj. Flow (vph)            | 11                                                                                | 27                                                                                | 16                                                                                | 54                                                                                | 60                                                                                | 33                                                                                | 16                                                                                  | 391                                                                                 | 27                                                                                  | 22                                                                                  | 565                                                                                 | 5                                                                                   |
| Shared Lane Traffic (%)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Group Flow (vph)      | 0                                                                                 | 54                                                                                | 0                                                                                 | 0                                                                                 | 147                                                                               | 0                                                                                 | 16                                                                                  | 418                                                                                 | 0                                                                                   | 22                                                                                  | 570                                                                                 | 0                                                                                   |
| Enter Blocked Intersection | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  |
| Lane Alignment             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                                | Left                                                                                | Right                                                                               | Left                                                                                | Left                                                                                | Right                                                                               |
| Median Width(m)            |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                     | 3.7                                                                                 |                                                                                     |                                                                                     | 3.7                                                                                 |                                                                                     |
| Link Offset(m)             |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                     | 0.0                                                                                 |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |
| Crosswalk Width(m)         |                                                                                   | 4.8                                                                               |                                                                                   |                                                                                   | 4.8                                                                               |                                                                                   |                                                                                     | 4.8                                                                                 |                                                                                     |                                                                                     | 4.8                                                                                 |                                                                                     |
| Two way Left Turn Lane     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Headway Factor             | 0.99                                                                              | 0.99                                                                              | 0.99                                                                              | 0.99                                                                              | 0.99                                                                              | 0.99                                                                              | 0.99                                                                                | 0.99                                                                                | 0.99                                                                                | 0.99                                                                                | 0.99                                                                                | 0.99                                                                                |
| Turning Speed (k/h)        | 25                                                                                |                                                                                   | 15                                                                                | 25                                                                                |                                                                                   | 15                                                                                | 25                                                                                  |                                                                                     | 15                                                                                  | 25                                                                                  |                                                                                     | 15                                                                                  |
| Turn Type                  | Perm                                                                              | NA                                                                                |                                                                                   | Perm                                                                              | NA                                                                                |                                                                                   | Perm                                                                                | NA                                                                                  |                                                                                     | Perm                                                                                | NA                                                                                  |                                                                                     |
| Protected Phases           |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                     | 2                                                                                   |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |
| Permitted Phases           | 4                                                                                 |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 2                                                                                   |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |                                                                                     |
| Detector Phase             | 4                                                                                 | 4                                                                                 |                                                                                   | 4                                                                                 | 4                                                                                 |                                                                                   | 2                                                                                   | 2                                                                                   |                                                                                     | 2                                                                                   | 2                                                                                   |                                                                                     |
| Switch Phase               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)        | 10.0                                                                              | 10.0                                                                              |                                                                                   | 10.0                                                                              | 10.0                                                                              |                                                                                   | 10.0                                                                                | 10.0                                                                                |                                                                                     | 10.0                                                                                | 10.0                                                                                |                                                                                     |
| Minimum Split (s)          | 24.0                                                                              | 24.0                                                                              |                                                                                   | 24.0                                                                              | 24.0                                                                              |                                                                                   | 24.0                                                                                | 24.0                                                                                |                                                                                     | 24.0                                                                                | 24.0                                                                                |                                                                                     |
| Total Split (s)            | 24.0                                                                              | 24.0                                                                              |                                                                                   | 24.0                                                                              | 24.0                                                                              |                                                                                   | 36.0                                                                                | 36.0                                                                                |                                                                                     | 36.0                                                                                | 36.0                                                                                |                                                                                     |
| Total Split (%)            | 40.0%                                                                             | 40.0%                                                                             |                                                                                   | 40.0%                                                                             | 40.0%                                                                             |                                                                                   | 60.0%                                                                               | 60.0%                                                                               |                                                                                     | 60.0%                                                                               | 60.0%                                                                               |                                                                                     |
| Maximum Green (s)          | 18.0                                                                              | 18.0                                                                              |                                                                                   | 18.0                                                                              | 18.0                                                                              |                                                                                   | 30.0                                                                                | 30.0                                                                                |                                                                                     | 30.0                                                                                | 30.0                                                                                |                                                                                     |
| Yellow Time (s)            | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                                 | 4.0                                                                                 |                                                                                     | 4.0                                                                                 | 4.0                                                                                 |                                                                                     |
| All-Red Time (s)           | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0                                                                                 | 2.0                                                                                 |                                                                                     | 2.0                                                                                 | 2.0                                                                                 |                                                                                     |
| Lost Time Adjust (s)       |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |
| Total Lost Time (s)        |                                                                                   | 6.0                                                                               |                                                                                   |                                                                                   | 6.0                                                                               |                                                                                   | 6.0                                                                                 | 6.0                                                                                 |                                                                                     | 6.0                                                                                 | 6.0                                                                                 |                                                                                     |
| Lead/Lag                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lead-Lag Optimize?         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Vehicle Extension (s)      | 3.0                                                                               | 3.0                                                                               |                                                                                   | 3.0                                                                               | 3.0                                                                               |                                                                                   | 3.0                                                                                 | 3.0                                                                                 |                                                                                     | 3.0                                                                                 | 3.0                                                                                 |                                                                                     |
| Recall Mode                | None                                                                              | None                                                                              |                                                                                   | None                                                                              | None                                                                              |                                                                                   | None                                                                                | None                                                                                |                                                                                     | None                                                                                | None                                                                                |                                                                                     |
| Walk Time (s)              | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                                 | 7.0                                                                                 |                                                                                     | 7.0                                                                                 | 7.0                                                                                 |                                                                                     |
| Flash Dont Walk (s)        | 11.0                                                                              | 11.0                                                                              |                                                                                   | 11.0                                                                              | 11.0                                                                              |                                                                                   | 11.0                                                                                | 11.0                                                                                |                                                                                     | 11.0                                                                                | 11.0                                                                                |                                                                                     |
| Pedestrian Calls (#/hr)    | 5                                                                                 | 5                                                                                 |                                                                                   | 5                                                                                 | 5                                                                                 |                                                                                   | 5                                                                                   | 5                                                                                   |                                                                                     | 5                                                                                   | 5                                                                                   |                                                                                     |



Lanes, Volumes, Timings  
10: Division Rd & Road 3E

PM Peak Hour  
2027 Future Background Alt-1b

|                        |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group             | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Act Effect Green (s)   |                                                                                   | 16.2                                                                              |                                                                                   |                                                                                   | 16.2                                                                              |                                                                                   | 22.5                                                                                | 22.5                                                                                |                                                                                     | 22.5                                                                                | 22.5                                                                                |                                                                                     |
| Actuated g/C Ratio     |                                                                                   | 0.41                                                                              |                                                                                   |                                                                                   | 0.41                                                                              |                                                                                   | 0.57                                                                                | 0.57                                                                                |                                                                                     | 0.57                                                                                | 0.57                                                                                |                                                                                     |
| v/c Ratio              |                                                                                   | 0.08                                                                              |                                                                                   |                                                                                   | 0.22                                                                              |                                                                                   | 0.04                                                                                | 0.39                                                                                |                                                                                     | 0.04                                                                                | 0.53                                                                                |                                                                                     |
| Control Delay          |                                                                                   | 11.4                                                                              |                                                                                   |                                                                                   | 13.6                                                                              |                                                                                   | 7.3                                                                                 | 9.1                                                                                 |                                                                                     | 7.2                                                                                 | 11.0                                                                                |                                                                                     |
| Queue Delay            |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |
| Total Delay            |                                                                                   | 11.4                                                                              |                                                                                   |                                                                                   | 13.6                                                                              |                                                                                   | 7.3                                                                                 | 9.1                                                                                 |                                                                                     | 7.2                                                                                 | 11.0                                                                                |                                                                                     |
| LOS                    |                                                                                   | B                                                                                 |                                                                                   |                                                                                   | B                                                                                 |                                                                                   | A                                                                                   | A                                                                                   |                                                                                     | A                                                                                   | B                                                                                   |                                                                                     |
| Approach Delay         |                                                                                   | 11.4                                                                              |                                                                                   |                                                                                   | 13.6                                                                              |                                                                                   |                                                                                     | 9.0                                                                                 |                                                                                     |                                                                                     | 10.8                                                                                |                                                                                     |
| Approach LOS           |                                                                                   | B                                                                                 |                                                                                   |                                                                                   | B                                                                                 |                                                                                   |                                                                                     | A                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |
| Queue Length 50th (m)  |                                                                                   | 2.1                                                                               |                                                                                   |                                                                                   | 7.1                                                                               |                                                                                   | 0.6                                                                                 | 18.7                                                                                |                                                                                     | 0.8                                                                                 | 29.0                                                                                |                                                                                     |
| Queue Length 95th (m)  |                                                                                   | 10.1                                                                              |                                                                                   |                                                                                   | 23.4                                                                              |                                                                                   | 3.5                                                                                 | 47.8                                                                                |                                                                                     | 4.3                                                                                 | 72.3                                                                                |                                                                                     |
| Internal Link Dist (m) |                                                                                   | 8.0                                                                               |                                                                                   |                                                                                   | 2009.4                                                                            |                                                                                   |                                                                                     | 54.4                                                                                |                                                                                     |                                                                                     | 57.8                                                                                |                                                                                     |
| Turn Bay Length (m)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Base Capacity (vph)    |                                                                                   | 865                                                                               |                                                                                   |                                                                                   | 837                                                                               |                                                                                   | 523                                                                                 | 1395                                                                                |                                                                                     | 723                                                                                 | 1406                                                                                |                                                                                     |
| 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                                                                              |                                                                                   |                                                                                   | 0.18                                                                              |                                                                                   | 0.03                                                                                | 0.30                                                                                |                                                                                     | 0.03                                                                                | 0.41                                                                                |                                                                                     |

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 39.5

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.53

Intersection Signal Delay: 10.5

Intersection LOS: B

Intersection Capacity Utilization 50.9%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 10: Division Rd & Road 3E



Lanes, Volumes, Timings  
10: Division Rd & Road 3E

AM Peak Hour  
2027 Total Future Alt-1a

|                            |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group                 | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations        |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                    |  |                                                                                     |                                                                                     |  |                                                                                     |
| Traffic Volume (vph)       | 5                                                                                 | 30                                                                                | 10                                                                                | 35                                                                                | 25                                                                                | 25                                                                                | 5                                                                                  | 480                                                                                 | 165                                                                                 | 90                                                                                  | 315                                                                                 | 5                                                                                   |
| Future Volume (vph)        | 5                                                                                 | 30                                                                                | 10                                                                                | 35                                                                                | 25                                                                                | 25                                                                                | 5                                                                                  | 480                                                                                 | 165                                                                                 | 90                                                                                  | 315                                                                                 | 5                                                                                   |
| Ideal Flow (vphpl)         | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Lane Width (m)             | 3.7                                                                               | 3.7                                                                               | 3.7                                                                               | 3.7                                                                               | 3.7                                                                               | 3.7                                                                               | 3.7                                                                                | 3.7                                                                                 | 3.7                                                                                 | 3.7                                                                                 | 3.7                                                                                 | 3.7                                                                                 |
| Lane Util. Factor          | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Frt                        |                                                                                   | 0.970                                                                             |                                                                                   |                                                                                   | 0.960                                                                             |                                                                                   |                                                                                    | 0.966                                                                               |                                                                                     |                                                                                     | 0.998                                                                               |                                                                                     |
| Flt Protected              |                                                                                   | 0.995                                                                             |                                                                                   |                                                                                   | 0.980                                                                             |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 0.989                                                                               |                                                                                     |
| Satd. Flow (prot)          | 0                                                                                 | 1818                                                                              | 0                                                                                 | 0                                                                                 | 1772                                                                              | 0                                                                                 | 0                                                                                  | 1819                                                                                | 0                                                                                   | 0                                                                                   | 1859                                                                                | 0                                                                                   |
| Flt Permitted              |                                                                                   | 0.957                                                                             |                                                                                   |                                                                                   | 0.843                                                                             |                                                                                   |                                                                                    | 0.997                                                                               |                                                                                     |                                                                                     | 0.775                                                                               |                                                                                     |
| Satd. Flow (perm)          | 0                                                                                 | 1748                                                                              | 0                                                                                 | 0                                                                                 | 1524                                                                              | 0                                                                                 | 0                                                                                  | 1814                                                                                | 0                                                                                   | 0                                                                                   | 1457                                                                                | 0                                                                                   |
| Right Turn on Red          |                                                                                   |                                                                                   | Yes                                                                               |                                                                                   |                                                                                   | Yes                                                                               |                                                                                    |                                                                                     | Yes                                                                                 |                                                                                     |                                                                                     | Yes                                                                                 |
| Satd. Flow (RTOR)          |                                                                                   | 11                                                                                |                                                                                   |                                                                                   | 27                                                                                |                                                                                   |                                                                                    | 41                                                                                  |                                                                                     |                                                                                     | 1                                                                                   |                                                                                     |
| Link Speed (k/h)           |                                                                                   | 60                                                                                |                                                                                   |                                                                                   | 60                                                                                |                                                                                   |                                                                                    | 60                                                                                  |                                                                                     |                                                                                     | 60                                                                                  |                                                                                     |
| Link Distance (m)          |                                                                                   | 32.0                                                                              |                                                                                   |                                                                                   | 2033.4                                                                            |                                                                                   |                                                                                    | 78.4                                                                                |                                                                                     |                                                                                     | 81.8                                                                                |                                                                                     |
| Travel Time (s)            |                                                                                   | 1.9                                                                               |                                                                                   |                                                                                   | 122.0                                                                             |                                                                                   |                                                                                    | 4.7                                                                                 |                                                                                     |                                                                                     | 4.9                                                                                 |                                                                                     |
| 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                                                                                |
| Adj. Flow (vph)            | 5                                                                                 | 33                                                                                | 11                                                                                | 38                                                                                | 27                                                                                | 27                                                                                | 5                                                                                  | 522                                                                                 | 179                                                                                 | 98                                                                                  | 342                                                                                 | 5                                                                                   |
| Shared Lane Traffic (%)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Group Flow (vph)      | 0                                                                                 | 49                                                                                | 0                                                                                 | 0                                                                                 | 92                                                                                | 0                                                                                 | 0                                                                                  | 706                                                                                 | 0                                                                                   | 0                                                                                   | 445                                                                                 | 0                                                                                   |
| Enter Blocked Intersection | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                 | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  |
| Lane Alignment             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                               | Left                                                                                | Right                                                                               | Left                                                                                | Left                                                                                | Right                                                                               |
| Median Width(m)            |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                    | 0.0                                                                                 |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |
| Link Offset(m)             |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                    | 0.0                                                                                 |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |
| Crosswalk Width(m)         |                                                                                   | 4.8                                                                               |                                                                                   |                                                                                   | 4.8                                                                               |                                                                                   |                                                                                    | 4.8                                                                                 |                                                                                     |                                                                                     | 4.8                                                                                 |                                                                                     |
| Two way Left Turn Lane     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Headway Factor             | 0.99                                                                              | 0.99                                                                              | 0.99                                                                              | 0.99                                                                              | 0.99                                                                              | 0.99                                                                              | 0.99                                                                               | 0.99                                                                                | 0.99                                                                                | 0.99                                                                                | 0.99                                                                                | 0.99                                                                                |
| Turning Speed (k/h)        | 25                                                                                |                                                                                   | 15                                                                                | 25                                                                                |                                                                                   | 15                                                                                | 25                                                                                 |                                                                                     | 15                                                                                  | 25                                                                                  |                                                                                     | 15                                                                                  |
| Turn Type                  | Perm                                                                              | NA                                                                                |                                                                                   | Perm                                                                              | NA                                                                                |                                                                                   | Perm                                                                               | NA                                                                                  |                                                                                     | Perm                                                                                | NA                                                                                  |                                                                                     |
| Protected Phases           |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                    | 2                                                                                   |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |
| Permitted Phases           | 4                                                                                 |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 2                                                                                  |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |                                                                                     |
| Detector Phase             | 4                                                                                 | 4                                                                                 |                                                                                   | 4                                                                                 | 4                                                                                 |                                                                                   | 2                                                                                  | 2                                                                                   |                                                                                     | 2                                                                                   | 2                                                                                   |                                                                                     |
| Switch Phase               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)        | 10.0                                                                              | 10.0                                                                              |                                                                                   | 10.0                                                                              | 10.0                                                                              |                                                                                   | 10.0                                                                               | 10.0                                                                                |                                                                                     | 10.0                                                                                | 10.0                                                                                |                                                                                     |
| Minimum Split (s)          | 24.0                                                                              | 24.0                                                                              |                                                                                   | 24.0                                                                              | 24.0                                                                              |                                                                                   | 24.0                                                                               | 24.0                                                                                |                                                                                     | 24.0                                                                                | 24.0                                                                                |                                                                                     |
| Total Split (s)            | 24.0                                                                              | 24.0                                                                              |                                                                                   | 24.0                                                                              | 24.0                                                                              |                                                                                   | 36.0                                                                               | 36.0                                                                                |                                                                                     | 36.0                                                                                | 36.0                                                                                |                                                                                     |
| Total Split (%)            | 40.0%                                                                             | 40.0%                                                                             |                                                                                   | 40.0%                                                                             | 40.0%                                                                             |                                                                                   | 60.0%                                                                              | 60.0%                                                                               |                                                                                     | 60.0%                                                                               | 60.0%                                                                               |                                                                                     |
| Maximum Green (s)          | 18.0                                                                              | 18.0                                                                              |                                                                                   | 18.0                                                                              | 18.0                                                                              |                                                                                   | 30.0                                                                               | 30.0                                                                                |                                                                                     | 30.0                                                                                | 30.0                                                                                |                                                                                     |
| Yellow Time (s)            | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                                | 4.0                                                                                 |                                                                                     | 4.0                                                                                 | 4.0                                                                                 |                                                                                     |
| All-Red Time (s)           | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0                                                                                | 2.0                                                                                 |                                                                                     | 2.0                                                                                 | 2.0                                                                                 |                                                                                     |
| Lost Time Adjust (s)       |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                    | 0.0                                                                                 |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |
| Total Lost Time (s)        |                                                                                   | 6.0                                                                               |                                                                                   |                                                                                   | 6.0                                                                               |                                                                                   |                                                                                    | 6.0                                                                                 |                                                                                     |                                                                                     | 6.0                                                                                 |                                                                                     |
| Lead/Lag                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lead-Lag Optimize?         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Vehicle Extension (s)      | 3.0                                                                               | 3.0                                                                               |                                                                                   | 3.0                                                                               | 3.0                                                                               |                                                                                   | 3.0                                                                                | 3.0                                                                                 |                                                                                     | 3.0                                                                                 | 3.0                                                                                 |                                                                                     |
| Recall Mode                | None                                                                              | None                                                                              |                                                                                   | None                                                                              | None                                                                              |                                                                                   | None                                                                               | None                                                                                |                                                                                     | None                                                                                | None                                                                                |                                                                                     |
| Walk Time (s)              | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                                | 7.0                                                                                 |                                                                                     | 7.0                                                                                 | 7.0                                                                                 |                                                                                     |
| Flash Dont Walk (s)        | 11.0                                                                              | 11.0                                                                              |                                                                                   | 11.0                                                                              | 11.0                                                                              |                                                                                   | 11.0                                                                               | 11.0                                                                                |                                                                                     | 11.0                                                                                | 11.0                                                                                |                                                                                     |
| Pedestrian Calls (#/hr)    | 5                                                                                 | 5                                                                                 |                                                                                   | 5                                                                                 | 5                                                                                 |                                                                                   | 5                                                                                  | 5                                                                                   |                                                                                     | 5                                                                                   | 5                                                                                   |                                                                                     |

Lanes, Volumes, Timings  
10: Division Rd & Road 3E

AM Peak Hour  
2027 Total Future Alt-1a

|                        |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group             | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Act Effect Green (s)   |                                                                                   | 16.7                                                                              |                                                                                   |                                                                                   | 16.7                                                                              |                                                                                   |                                                                                    | 25.7                                                                                |                                                                                     |                                                                                     | 25.7                                                                                |                                                                                     |
| Actuated g/C Ratio     |                                                                                   | 0.39                                                                              |                                                                                   |                                                                                   | 0.39                                                                              |                                                                                   |                                                                                    | 0.61                                                                                |                                                                                     |                                                                                     | 0.61                                                                                |                                                                                     |
| v/c Ratio              |                                                                                   | 0.07                                                                              |                                                                                   |                                                                                   | 0.15                                                                              |                                                                                   |                                                                                    | 0.63                                                                                |                                                                                     |                                                                                     | 0.50                                                                                |                                                                                     |
| Control Delay          |                                                                                   | 13.2                                                                              |                                                                                   |                                                                                   | 12.8                                                                              |                                                                                   |                                                                                    | 12.2                                                                                |                                                                                     |                                                                                     | 10.8                                                                                |                                                                                     |
| Queue Delay            |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                    | 0.0                                                                                 |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |
| Total Delay            |                                                                                   | 13.2                                                                              |                                                                                   |                                                                                   | 12.8                                                                              |                                                                                   |                                                                                    | 12.2                                                                                |                                                                                     |                                                                                     | 10.8                                                                                |                                                                                     |
| LOS                    |                                                                                   | B                                                                                 |                                                                                   |                                                                                   | B                                                                                 |                                                                                   |                                                                                    | B                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |
| Approach Delay         |                                                                                   | 13.2                                                                              |                                                                                   |                                                                                   | 12.8                                                                              |                                                                                   |                                                                                    | 12.2                                                                                |                                                                                     |                                                                                     | 10.8                                                                                |                                                                                     |
| Approach LOS           |                                                                                   | B                                                                                 |                                                                                   |                                                                                   | B                                                                                 |                                                                                   |                                                                                    | B                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |
| Queue Length 50th (m)  |                                                                                   | 2.5                                                                               |                                                                                   |                                                                                   | 4.3                                                                               |                                                                                   |                                                                                    | 37.9                                                                                |                                                                                     |                                                                                     | 22.8                                                                                |                                                                                     |
| Queue Length 95th (m)  |                                                                                   | 9.7                                                                               |                                                                                   |                                                                                   | 14.9                                                                              |                                                                                   |                                                                                    | #102.7                                                                              |                                                                                     |                                                                                     | 61.3                                                                                |                                                                                     |
| Internal Link Dist (m) |                                                                                   | 8.0                                                                               |                                                                                   |                                                                                   | 2009.4                                                                            |                                                                                   |                                                                                    | 54.4                                                                                |                                                                                     |                                                                                     | 57.8                                                                                |                                                                                     |
| Turn Bay Length (m)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Base Capacity (vph)    |                                                                                   | 879                                                                               |                                                                                   |                                                                                   | 775                                                                               |                                                                                   |                                                                                    | 1281                                                                                |                                                                                     |                                                                                     | 1020                                                                                |                                                                                     |
| Starvation Cap Reductn |                                                                                   | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |                                                                                    | 0                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Spillback Cap Reductn  |                                                                                   | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |                                                                                    | 0                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Storage Cap Reductn    |                                                                                   | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |                                                                                    | 0                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Reduced v/c Ratio      |                                                                                   | 0.06                                                                              |                                                                                   |                                                                                   | 0.12                                                                              |                                                                                   |                                                                                    | 0.55                                                                                |                                                                                     |                                                                                     | 0.44                                                                                |                                                                                     |

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 42.4

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.63

Intersection Signal Delay: 11.8

Intersection LOS: B

Intersection Capacity Utilization 83.9%

ICU Level of Service E

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 10: Division Rd & Road 3E



Lanes, Volumes, Timings  
10: Division Rd & Road 3E

PM Peak Hour  
2027 Total Future Alt-1a

|                            |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group                 | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations        |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                    |  |                                                                                     |                                                                                     |  |                                                                                     |
| Traffic Volume (vph)       | 10                                                                                | 25                                                                                | 15                                                                                | 100                                                                               | 55                                                                                | 80                                                                                | 15                                                                                 | 360                                                                                 | 25                                                                                  | 20                                                                                  | 520                                                                                 | 5                                                                                   |
| Future Volume (vph)        | 10                                                                                | 25                                                                                | 15                                                                                | 100                                                                               | 55                                                                                | 80                                                                                | 15                                                                                 | 360                                                                                 | 25                                                                                  | 20                                                                                  | 520                                                                                 | 5                                                                                   |
| Ideal Flow (vphpl)         | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Lane Width (m)             | 3.7                                                                               | 3.7                                                                               | 3.7                                                                               | 3.7                                                                               | 3.7                                                                               | 3.7                                                                               | 3.7                                                                                | 3.7                                                                                 | 3.7                                                                                 | 3.7                                                                                 | 3.7                                                                                 | 3.7                                                                                 |
| Lane Util. Factor          | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Frt                        |                                                                                   | 0.960                                                                             |                                                                                   |                                                                                   | 0.954                                                                             |                                                                                   |                                                                                    | 0.992                                                                               |                                                                                     |                                                                                     | 0.999                                                                               |                                                                                     |
| Flt Protected              |                                                                                   | 0.990                                                                             |                                                                                   |                                                                                   | 0.979                                                                             |                                                                                   |                                                                                    | 0.998                                                                               |                                                                                     |                                                                                     | 0.998                                                                               |                                                                                     |
| Satd. Flow (prot)          | 0                                                                                 | 1790                                                                              | 0                                                                                 | 0                                                                                 | 1759                                                                              | 0                                                                                 | 0                                                                                  | 1865                                                                                | 0                                                                                   | 0                                                                                   | 1878                                                                                | 0                                                                                   |
| Flt Permitted              |                                                                                   | 0.905                                                                             |                                                                                   |                                                                                   | 0.837                                                                             |                                                                                   |                                                                                    | 0.970                                                                               |                                                                                     |                                                                                     | 0.975                                                                               |                                                                                     |
| Satd. Flow (perm)          | 0                                                                                 | 1636                                                                              | 0                                                                                 | 0                                                                                 | 1504                                                                              | 0                                                                                 | 0                                                                                  | 1812                                                                                | 0                                                                                   | 0                                                                                   | 1835                                                                                | 0                                                                                   |
| Right Turn on Red          |                                                                                   |                                                                                   | Yes                                                                               |                                                                                   |                                                                                   | Yes                                                                               |                                                                                    |                                                                                     | Yes                                                                                 |                                                                                     |                                                                                     | Yes                                                                                 |
| Satd. Flow (RTOR)          |                                                                                   | 16                                                                                |                                                                                   |                                                                                   | 44                                                                                |                                                                                   |                                                                                    | 8                                                                                   |                                                                                     |                                                                                     | 1                                                                                   |                                                                                     |
| Link Speed (k/h)           |                                                                                   | 60                                                                                |                                                                                   |                                                                                   | 60                                                                                |                                                                                   |                                                                                    | 60                                                                                  |                                                                                     |                                                                                     | 60                                                                                  |                                                                                     |
| Link Distance (m)          |                                                                                   | 32.0                                                                              |                                                                                   |                                                                                   | 2033.4                                                                            |                                                                                   |                                                                                    | 78.4                                                                                |                                                                                     |                                                                                     | 81.8                                                                                |                                                                                     |
| Travel Time (s)            |                                                                                   | 1.9                                                                               |                                                                                   |                                                                                   | 122.0                                                                             |                                                                                   |                                                                                    | 4.7                                                                                 |                                                                                     |                                                                                     | 4.9                                                                                 |                                                                                     |
| 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                                                                                |
| Adj. Flow (vph)            | 11                                                                                | 27                                                                                | 16                                                                                | 109                                                                               | 60                                                                                | 87                                                                                | 16                                                                                 | 391                                                                                 | 27                                                                                  | 22                                                                                  | 565                                                                                 | 5                                                                                   |
| Shared Lane Traffic (%)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Group Flow (vph)      | 0                                                                                 | 54                                                                                | 0                                                                                 | 0                                                                                 | 256                                                                               | 0                                                                                 | 0                                                                                  | 434                                                                                 | 0                                                                                   | 0                                                                                   | 592                                                                                 | 0                                                                                   |
| Enter Blocked Intersection | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                 | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  |
| Lane Alignment             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                               | Left                                                                                | Right                                                                               | Left                                                                                | Left                                                                                | Right                                                                               |
| Median Width(m)            |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                    | 0.0                                                                                 |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |
| Link Offset(m)             |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                    | 0.0                                                                                 |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |
| Crosswalk Width(m)         |                                                                                   | 4.8                                                                               |                                                                                   |                                                                                   | 4.8                                                                               |                                                                                   |                                                                                    | 4.8                                                                                 |                                                                                     |                                                                                     | 4.8                                                                                 |                                                                                     |
| Two way Left Turn Lane     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Headway Factor             | 0.99                                                                              | 0.99                                                                              | 0.99                                                                              | 0.99                                                                              | 0.99                                                                              | 0.99                                                                              | 0.99                                                                               | 0.99                                                                                | 0.99                                                                                | 0.99                                                                                | 0.99                                                                                | 0.99                                                                                |
| Turning Speed (k/h)        | 25                                                                                |                                                                                   | 15                                                                                | 25                                                                                |                                                                                   | 15                                                                                | 25                                                                                 |                                                                                     | 15                                                                                  | 25                                                                                  |                                                                                     | 15                                                                                  |
| Turn Type                  | Perm                                                                              | NA                                                                                |                                                                                   | Perm                                                                              | NA                                                                                |                                                                                   | Perm                                                                               | NA                                                                                  |                                                                                     | Perm                                                                                | NA                                                                                  |                                                                                     |
| Protected Phases           |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                    | 2                                                                                   |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |
| Permitted Phases           | 4                                                                                 |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 2                                                                                  |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |                                                                                     |
| Detector Phase             | 4                                                                                 | 4                                                                                 |                                                                                   | 4                                                                                 | 4                                                                                 |                                                                                   | 2                                                                                  | 2                                                                                   |                                                                                     | 2                                                                                   | 2                                                                                   |                                                                                     |
| Switch Phase               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)        | 10.0                                                                              | 10.0                                                                              |                                                                                   | 10.0                                                                              | 10.0                                                                              |                                                                                   | 10.0                                                                               | 10.0                                                                                |                                                                                     | 10.0                                                                                | 10.0                                                                                |                                                                                     |
| Minimum Split (s)          | 24.0                                                                              | 24.0                                                                              |                                                                                   | 24.0                                                                              | 24.0                                                                              |                                                                                   | 24.0                                                                               | 24.0                                                                                |                                                                                     | 24.0                                                                                | 24.0                                                                                |                                                                                     |
| Total Split (s)            | 24.0                                                                              | 24.0                                                                              |                                                                                   | 24.0                                                                              | 24.0                                                                              |                                                                                   | 36.0                                                                               | 36.0                                                                                |                                                                                     | 36.0                                                                                | 36.0                                                                                |                                                                                     |
| Total Split (%)            | 40.0%                                                                             | 40.0%                                                                             |                                                                                   | 40.0%                                                                             | 40.0%                                                                             |                                                                                   | 60.0%                                                                              | 60.0%                                                                               |                                                                                     | 60.0%                                                                               | 60.0%                                                                               |                                                                                     |
| Maximum Green (s)          | 18.0                                                                              | 18.0                                                                              |                                                                                   | 18.0                                                                              | 18.0                                                                              |                                                                                   | 30.0                                                                               | 30.0                                                                                |                                                                                     | 30.0                                                                                | 30.0                                                                                |                                                                                     |
| Yellow Time (s)            | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                                | 4.0                                                                                 |                                                                                     | 4.0                                                                                 | 4.0                                                                                 |                                                                                     |
| All-Red Time (s)           | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0                                                                                | 2.0                                                                                 |                                                                                     | 2.0                                                                                 | 2.0                                                                                 |                                                                                     |
| Lost Time Adjust (s)       |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                    | 0.0                                                                                 |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |
| Total Lost Time (s)        |                                                                                   | 6.0                                                                               |                                                                                   |                                                                                   | 6.0                                                                               |                                                                                   |                                                                                    | 6.0                                                                                 |                                                                                     |                                                                                     | 6.0                                                                                 |                                                                                     |
| Lead/Lag                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lead-Lag Optimize?         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Vehicle Extension (s)      | 3.0                                                                               | 3.0                                                                               |                                                                                   | 3.0                                                                               | 3.0                                                                               |                                                                                   | 3.0                                                                                | 3.0                                                                                 |                                                                                     | 3.0                                                                                 | 3.0                                                                                 |                                                                                     |
| Recall Mode                | None                                                                              | None                                                                              |                                                                                   | None                                                                              | None                                                                              |                                                                                   | None                                                                               | None                                                                                |                                                                                     | None                                                                                | None                                                                                |                                                                                     |
| Walk Time (s)              | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                                | 7.0                                                                                 |                                                                                     | 7.0                                                                                 | 7.0                                                                                 |                                                                                     |
| Flash Dont Walk (s)        | 11.0                                                                              | 11.0                                                                              |                                                                                   | 11.0                                                                              | 11.0                                                                              |                                                                                   | 11.0                                                                               | 11.0                                                                                |                                                                                     | 11.0                                                                                | 11.0                                                                                |                                                                                     |
| Pedestrian Calls (#/hr)    | 5                                                                                 | 5                                                                                 |                                                                                   | 5                                                                                 | 5                                                                                 |                                                                                   | 5                                                                                  | 5                                                                                   |                                                                                     | 5                                                                                   | 5                                                                                   |                                                                                     |

Lanes, Volumes, Timings  
10: Division Rd & Road 3E

PM Peak Hour  
2027 Total Future Alt-1a

|                        |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group             | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Act Effect Green (s)   |                                                                                   | 13.0                                                                              |                                                                                   |                                                                                   | 13.0                                                                              |                                                                                   |                                                                                     | 20.2                                                                                |                                                                                     |                                                                                     | 20.2                                                                                |                                                                                     |
| Actuated g/C Ratio     |                                                                                   | 0.28                                                                              |                                                                                   |                                                                                   | 0.28                                                                              |                                                                                   |                                                                                     | 0.44                                                                                |                                                                                     |                                                                                     | 0.44                                                                                |                                                                                     |
| v/c Ratio              |                                                                                   | 0.11                                                                              |                                                                                   |                                                                                   | 0.56                                                                              |                                                                                   |                                                                                     | 0.54                                                                                |                                                                                     |                                                                                     | 0.73                                                                                |                                                                                     |
| Control Delay          |                                                                                   | 11.9                                                                              |                                                                                   |                                                                                   | 18.4                                                                              |                                                                                   |                                                                                     | 12.0                                                                                |                                                                                     |                                                                                     | 16.6                                                                                |                                                                                     |
| Queue Delay            |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                     | 0.0                                                                                 |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |
| Total Delay            |                                                                                   | 11.9                                                                              |                                                                                   |                                                                                   | 18.4                                                                              |                                                                                   |                                                                                     | 12.0                                                                                |                                                                                     |                                                                                     | 16.6                                                                                |                                                                                     |
| LOS                    |                                                                                   | B                                                                                 |                                                                                   |                                                                                   | B                                                                                 |                                                                                   |                                                                                     | B                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |
| Approach Delay         |                                                                                   | 11.9                                                                              |                                                                                   |                                                                                   | 18.4                                                                              |                                                                                   |                                                                                     | 12.0                                                                                |                                                                                     |                                                                                     | 16.6                                                                                |                                                                                     |
| Approach LOS           |                                                                                   | B                                                                                 |                                                                                   |                                                                                   | B                                                                                 |                                                                                   |                                                                                     | B                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |
| Queue Length 50th (m)  |                                                                                   | 2.3                                                                               |                                                                                   |                                                                                   | 14.6                                                                              |                                                                                   |                                                                                     | 22.0                                                                                |                                                                                     |                                                                                     | 34.6                                                                                |                                                                                     |
| Queue Length 95th (m)  |                                                                                   | 10.1                                                                              |                                                                                   |                                                                                   | 40.0                                                                              |                                                                                   |                                                                                     | 50.7                                                                                |                                                                                     |                                                                                     | 77.6                                                                                |                                                                                     |
| Internal Link Dist (m) |                                                                                   | 8.0                                                                               |                                                                                   |                                                                                   | 2009.4                                                                            |                                                                                   |                                                                                     | 54.4                                                                                |                                                                                     |                                                                                     | 57.8                                                                                |                                                                                     |
| Turn Bay Length (m)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Base Capacity (vph)    |                                                                                   | 683                                                                               |                                                                                   |                                                                                   | 645                                                                               |                                                                                   |                                                                                     | 1246                                                                                |                                                                                     |                                                                                     | 1260                                                                                |                                                                                     |
| Starvation Cap Reductn |                                                                                   | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |                                                                                     | 0                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Spillback Cap Reductn  |                                                                                   | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |                                                                                     | 0                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Storage Cap Reductn    |                                                                                   | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |                                                                                     | 0                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Reduced v/c Ratio      |                                                                                   | 0.08                                                                              |                                                                                   |                                                                                   | 0.40                                                                              |                                                                                   |                                                                                     | 0.35                                                                                |                                                                                     |                                                                                     | 0.47                                                                                |                                                                                     |

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 45.8

Natural Cycle: 55

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 15.3

Intersection LOS: B

Intersection Capacity Utilization 65.5%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 10: Division Rd & Road 3E



Lanes, Volumes, Timings  
10: Division Rd & Road 3E

AM Peak Hour  
2027 Total Future Alt-1b

|                            |  |  |  |  |  |  |   |  |  |  |  |  |
|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group                 | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations        |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |  |  |                                                                                     |  |  |                                                                                     |
| Traffic Volume (vph)       | 5                                                                                 | 30                                                                                | 10                                                                                | 35                                                                                | 25                                                                                | 25                                                                                | 5                                                                                   | 480                                                                                 | 165                                                                                 | 90                                                                                  | 315                                                                                 | 5                                                                                   |
| Future Volume (vph)        | 5                                                                                 | 30                                                                                | 10                                                                                | 35                                                                                | 25                                                                                | 25                                                                                | 5                                                                                   | 480                                                                                 | 165                                                                                 | 90                                                                                  | 315                                                                                 | 5                                                                                   |
| Ideal Flow (vphpl)         | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Lane Width (m)             | 3.7                                                                               | 3.7                                                                               | 3.7                                                                               | 3.7                                                                               | 3.7                                                                               | 3.7                                                                               | 3.7                                                                                 | 3.7                                                                                 | 3.7                                                                                 | 3.7                                                                                 | 3.7                                                                                 | 3.7                                                                                 |
| Lane Util. Factor          | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Frt                        |                                                                                   | 0.970                                                                             |                                                                                   |                                                                                   | 0.960                                                                             |                                                                                   |                                                                                     | 0.962                                                                               |                                                                                     |                                                                                     | 0.998                                                                               |                                                                                     |
| Flt Protected              |                                                                                   | 0.995                                                                             |                                                                                   |                                                                                   | 0.980                                                                             |                                                                                   | 0.950                                                                               |                                                                                     |                                                                                     | 0.950                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (prot)          | 0                                                                                 | 1818                                                                              | 0                                                                                 | 0                                                                                 | 1772                                                                              | 0                                                                                 | 1789                                                                                | 1812                                                                                | 0                                                                                   | 1789                                                                                | 1880                                                                                | 0                                                                                   |
| Flt Permitted              |                                                                                   | 0.957                                                                             |                                                                                   |                                                                                   | 0.843                                                                             |                                                                                   | 0.553                                                                               |                                                                                     |                                                                                     | 0.276                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (perm)          | 0                                                                                 | 1748                                                                              | 0                                                                                 | 0                                                                                 | 1524                                                                              | 0                                                                                 | 1042                                                                                | 1812                                                                                | 0                                                                                   | 520                                                                                 | 1880                                                                                | 0                                                                                   |
| Right Turn on Red          |                                                                                   |                                                                                   | Yes                                                                               |                                                                                   |                                                                                   | Yes                                                                               |                                                                                     |                                                                                     | Yes                                                                                 |                                                                                     |                                                                                     | Yes                                                                                 |
| Satd. Flow (RTOR)          |                                                                                   | 11                                                                                |                                                                                   |                                                                                   | 27                                                                                |                                                                                   |                                                                                     | 41                                                                                  |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |
| Link Speed (k/h)           |                                                                                   | 60                                                                                |                                                                                   |                                                                                   | 60                                                                                |                                                                                   |                                                                                     | 60                                                                                  |                                                                                     |                                                                                     | 60                                                                                  |                                                                                     |
| Link Distance (m)          |                                                                                   | 32.0                                                                              |                                                                                   |                                                                                   | 2033.4                                                                            |                                                                                   |                                                                                     | 78.4                                                                                |                                                                                     |                                                                                     | 81.8                                                                                |                                                                                     |
| Travel Time (s)            |                                                                                   | 1.9                                                                               |                                                                                   |                                                                                   | 122.0                                                                             |                                                                                   |                                                                                     | 4.7                                                                                 |                                                                                     |                                                                                     | 4.9                                                                                 |                                                                                     |
| 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                                                                                |
| Adj. Flow (vph)            | 5                                                                                 | 33                                                                                | 11                                                                                | 38                                                                                | 27                                                                                | 27                                                                                | 5                                                                                   | 522                                                                                 | 179                                                                                 | 98                                                                                  | 342                                                                                 | 5                                                                                   |
| Shared Lane Traffic (%)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Group Flow (vph)      | 0                                                                                 | 49                                                                                | 0                                                                                 | 0                                                                                 | 92                                                                                | 0                                                                                 | 5                                                                                   | 701                                                                                 | 0                                                                                   | 98                                                                                  | 347                                                                                 | 0                                                                                   |
| Enter Blocked Intersection | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  |
| Lane Alignment             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                                | Left                                                                                | Right                                                                               | Left                                                                                | Left                                                                                | Right                                                                               |
| Median Width(m)            |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                     | 3.7                                                                                 |                                                                                     |                                                                                     | 3.7                                                                                 |                                                                                     |
| Link Offset(m)             |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                     | 0.0                                                                                 |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |
| Crosswalk Width(m)         |                                                                                   | 4.8                                                                               |                                                                                   |                                                                                   | 4.8                                                                               |                                                                                   |                                                                                     | 4.8                                                                                 |                                                                                     |                                                                                     | 4.8                                                                                 |                                                                                     |
| Two way Left Turn Lane     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Headway Factor             | 0.99                                                                              | 0.99                                                                              | 0.99                                                                              | 0.99                                                                              | 0.99                                                                              | 0.99                                                                              | 0.99                                                                                | 0.99                                                                                | 0.99                                                                                | 0.99                                                                                | 0.99                                                                                | 0.99                                                                                |
| Turning Speed (k/h)        | 25                                                                                |                                                                                   | 15                                                                                | 25                                                                                |                                                                                   | 15                                                                                | 25                                                                                  |                                                                                     | 15                                                                                  | 25                                                                                  |                                                                                     | 15                                                                                  |
| Turn Type                  | Perm                                                                              | NA                                                                                |                                                                                   | Perm                                                                              | NA                                                                                |                                                                                   | Perm                                                                                | NA                                                                                  |                                                                                     | Perm                                                                                | NA                                                                                  |                                                                                     |
| Protected Phases           |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                     | 2                                                                                   |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |
| Permitted Phases           | 4                                                                                 |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 2                                                                                   |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |                                                                                     |
| Detector Phase             | 4                                                                                 | 4                                                                                 |                                                                                   | 4                                                                                 | 4                                                                                 |                                                                                   | 2                                                                                   | 2                                                                                   |                                                                                     | 2                                                                                   | 2                                                                                   |                                                                                     |
| Switch Phase               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)        | 10.0                                                                              | 10.0                                                                              |                                                                                   | 10.0                                                                              | 10.0                                                                              |                                                                                   | 10.0                                                                                | 10.0                                                                                |                                                                                     | 10.0                                                                                | 10.0                                                                                |                                                                                     |
| Minimum Split (s)          | 24.0                                                                              | 24.0                                                                              |                                                                                   | 24.0                                                                              | 24.0                                                                              |                                                                                   | 24.0                                                                                | 24.0                                                                                |                                                                                     | 24.0                                                                                | 24.0                                                                                |                                                                                     |
| Total Split (s)            | 24.0                                                                              | 24.0                                                                              |                                                                                   | 24.0                                                                              | 24.0                                                                              |                                                                                   | 36.0                                                                                | 36.0                                                                                |                                                                                     | 36.0                                                                                | 36.0                                                                                |                                                                                     |
| Total Split (%)            | 40.0%                                                                             | 40.0%                                                                             |                                                                                   | 40.0%                                                                             | 40.0%                                                                             |                                                                                   | 60.0%                                                                               | 60.0%                                                                               |                                                                                     | 60.0%                                                                               | 60.0%                                                                               |                                                                                     |
| Maximum Green (s)          | 18.0                                                                              | 18.0                                                                              |                                                                                   | 18.0                                                                              | 18.0                                                                              |                                                                                   | 30.0                                                                                | 30.0                                                                                |                                                                                     | 30.0                                                                                | 30.0                                                                                |                                                                                     |
| Yellow Time (s)            | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                                 | 4.0                                                                                 |                                                                                     | 4.0                                                                                 | 4.0                                                                                 |                                                                                     |
| All-Red Time (s)           | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0                                                                                 | 2.0                                                                                 |                                                                                     | 2.0                                                                                 | 2.0                                                                                 |                                                                                     |
| Lost Time Adjust (s)       |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |
| Total Lost Time (s)        |                                                                                   | 6.0                                                                               |                                                                                   |                                                                                   | 6.0                                                                               |                                                                                   | 6.0                                                                                 | 6.0                                                                                 |                                                                                     | 6.0                                                                                 | 6.0                                                                                 |                                                                                     |
| Lead/Lag                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lead-Lag Optimize?         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Vehicle Extension (s)      | 3.0                                                                               | 3.0                                                                               |                                                                                   | 3.0                                                                               | 3.0                                                                               |                                                                                   | 3.0                                                                                 | 3.0                                                                                 |                                                                                     | 3.0                                                                                 | 3.0                                                                                 |                                                                                     |
| Recall Mode                | None                                                                              | None                                                                              |                                                                                   | None                                                                              | None                                                                              |                                                                                   | None                                                                                | None                                                                                |                                                                                     | None                                                                                | None                                                                                |                                                                                     |
| Walk Time (s)              | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                                 | 7.0                                                                                 |                                                                                     | 7.0                                                                                 | 7.0                                                                                 |                                                                                     |
| Flash Dont Walk (s)        | 11.0                                                                              | 11.0                                                                              |                                                                                   | 11.0                                                                              | 11.0                                                                              |                                                                                   | 11.0                                                                                | 11.0                                                                                |                                                                                     | 11.0                                                                                | 11.0                                                                                |                                                                                     |
| Pedestrian Calls (#/hr)    | 5                                                                                 | 5                                                                                 |                                                                                   | 5                                                                                 | 5                                                                                 |                                                                                   | 5                                                                                   | 5                                                                                   |                                                                                     | 5                                                                                   | 5                                                                                   |                                                                                     |

Lanes, Volumes, Timings  
10: Division Rd & Road 3E

AM Peak Hour  
2027 Total Future Alt-1b

|                        |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group             | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Act Effect Green (s)   |                                                                                   | 16.7                                                                              |                                                                                   |                                                                                   | 16.7                                                                              |                                                                                   | 25.6                                                                               | 25.6                                                                                |                                                                                     | 25.6                                                                                | 25.6                                                                                |                                                                                     |
| Actuated g/C Ratio     |                                                                                   | 0.39                                                                              |                                                                                   |                                                                                   | 0.39                                                                              |                                                                                   | 0.61                                                                               | 0.61                                                                                |                                                                                     | 0.61                                                                                | 0.61                                                                                |                                                                                     |
| v/c Ratio              |                                                                                   | 0.07                                                                              |                                                                                   |                                                                                   | 0.15                                                                              |                                                                                   | 0.01                                                                               | 0.63                                                                                |                                                                                     | 0.31                                                                                | 0.31                                                                                |                                                                                     |
| Control Delay          |                                                                                   | 13.2                                                                              |                                                                                   |                                                                                   | 12.8                                                                              |                                                                                   | 6.6                                                                                | 12.2                                                                                |                                                                                     | 11.4                                                                                | 7.9                                                                                 |                                                                                     |
| Queue Delay            |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                                | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |
| Total Delay            |                                                                                   | 13.2                                                                              |                                                                                   |                                                                                   | 12.8                                                                              |                                                                                   | 6.6                                                                                | 12.2                                                                                |                                                                                     | 11.4                                                                                | 7.9                                                                                 |                                                                                     |
| LOS                    |                                                                                   | B                                                                                 |                                                                                   |                                                                                   | B                                                                                 |                                                                                   | A                                                                                  | B                                                                                   |                                                                                     | B                                                                                   | A                                                                                   |                                                                                     |
| Approach Delay         |                                                                                   | 13.2                                                                              |                                                                                   |                                                                                   | 12.8                                                                              |                                                                                   |                                                                                    | 12.1                                                                                |                                                                                     |                                                                                     | 8.7                                                                                 |                                                                                     |
| Approach LOS           |                                                                                   | B                                                                                 |                                                                                   |                                                                                   | B                                                                                 |                                                                                   |                                                                                    | B                                                                                   |                                                                                     |                                                                                     | A                                                                                   |                                                                                     |
| Queue Length 50th (m)  |                                                                                   | 2.5                                                                               |                                                                                   |                                                                                   | 4.3                                                                               |                                                                                   | 0.2                                                                                | 37.5                                                                                |                                                                                     | 4.3                                                                                 | 15.1                                                                                |                                                                                     |
| Queue Length 95th (m)  |                                                                                   | 9.7                                                                               |                                                                                   |                                                                                   | 14.9                                                                              |                                                                                   | 1.7                                                                                | #99.2                                                                               |                                                                                     | 17.7                                                                                | 38.9                                                                                |                                                                                     |
| Internal Link Dist (m) |                                                                                   | 8.0                                                                               |                                                                                   |                                                                                   | 2009.4                                                                            |                                                                                   |                                                                                    | 54.4                                                                                |                                                                                     |                                                                                     | 57.8                                                                                |                                                                                     |
| Turn Bay Length (m)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Base Capacity (vph)    |                                                                                   | 882                                                                               |                                                                                   |                                                                                   | 778                                                                               |                                                                                   | 732                                                                                | 1285                                                                                |                                                                                     | 365                                                                                 | 1322                                                                                |                                                                                     |
| 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                                                                              |                                                                                   |                                                                                   | 0.12                                                                              |                                                                                   | 0.01                                                                               | 0.55                                                                                |                                                                                     | 0.27                                                                                | 0.26                                                                                |                                                                                     |

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 42.3

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.63

Intersection Signal Delay: 11.0

Intersection LOS: B

Intersection Capacity Utilization 70.1%

ICU Level of Service C

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 10: Division Rd & Road 3E



Lanes, Volumes, Timings  
10: Division Rd & Road 3E

PM Peak Hour  
2027 Total Future Alt-1b

|                            |  |  |  |  |  |  |   |  |  |  |  |  |
|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group                 | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations        |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |  |  |                                                                                     |  |  |                                                                                     |
| Traffic Volume (vph)       | 10                                                                                | 25                                                                                | 15                                                                                | 100                                                                               | 55                                                                                | 80                                                                                | 15                                                                                  | 360                                                                                 | 25                                                                                  | 20                                                                                  | 520                                                                                 | 5                                                                                   |
| Future Volume (vph)        | 10                                                                                | 25                                                                                | 15                                                                                | 100                                                                               | 55                                                                                | 80                                                                                | 15                                                                                  | 360                                                                                 | 25                                                                                  | 20                                                                                  | 520                                                                                 | 5                                                                                   |
| Ideal Flow (vphpl)         | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Lane Width (m)             | 3.7                                                                               | 3.7                                                                               | 3.7                                                                               | 3.7                                                                               | 3.7                                                                               | 3.7                                                                               | 3.7                                                                                 | 3.7                                                                                 | 3.7                                                                                 | 3.7                                                                                 | 3.7                                                                                 | 3.7                                                                                 |
| Lane Util. Factor          | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Frt                        |                                                                                   | 0.960                                                                             |                                                                                   |                                                                                   | 0.954                                                                             |                                                                                   |                                                                                     | 0.990                                                                               |                                                                                     |                                                                                     | 0.999                                                                               |                                                                                     |
| Flt Protected              |                                                                                   | 0.990                                                                             |                                                                                   |                                                                                   | 0.979                                                                             |                                                                                   | 0.950                                                                               |                                                                                     |                                                                                     | 0.950                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (prot)          | 0                                                                                 | 1790                                                                              | 0                                                                                 | 0                                                                                 | 1759                                                                              | 0                                                                                 | 1789                                                                                | 1865                                                                                | 0                                                                                   | 1789                                                                                | 1882                                                                                | 0                                                                                   |
| Flt Permitted              |                                                                                   | 0.909                                                                             |                                                                                   |                                                                                   | 0.837                                                                             |                                                                                   | 0.365                                                                               |                                                                                     |                                                                                     | 0.506                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (perm)          | 0                                                                                 | 1644                                                                              | 0                                                                                 | 0                                                                                 | 1504                                                                              | 0                                                                                 | 687                                                                                 | 1865                                                                                | 0                                                                                   | 953                                                                                 | 1882                                                                                | 0                                                                                   |
| Right Turn on Red          |                                                                                   |                                                                                   | Yes                                                                               |                                                                                   |                                                                                   | Yes                                                                               |                                                                                     |                                                                                     | Yes                                                                                 |                                                                                     |                                                                                     | Yes                                                                                 |
| Satd. Flow (RTOR)          |                                                                                   | 16                                                                                |                                                                                   |                                                                                   | 44                                                                                |                                                                                   |                                                                                     | 8                                                                                   |                                                                                     |                                                                                     | 1                                                                                   |                                                                                     |
| Link Speed (k/h)           |                                                                                   | 60                                                                                |                                                                                   |                                                                                   | 60                                                                                |                                                                                   |                                                                                     | 60                                                                                  |                                                                                     |                                                                                     | 60                                                                                  |                                                                                     |
| Link Distance (m)          |                                                                                   | 32.0                                                                              |                                                                                   |                                                                                   | 2033.4                                                                            |                                                                                   |                                                                                     | 78.4                                                                                |                                                                                     |                                                                                     | 81.8                                                                                |                                                                                     |
| Travel Time (s)            |                                                                                   | 1.9                                                                               |                                                                                   |                                                                                   | 122.0                                                                             |                                                                                   |                                                                                     | 4.7                                                                                 |                                                                                     |                                                                                     | 4.9                                                                                 |                                                                                     |
| 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                                                                                |
| Adj. Flow (vph)            | 11                                                                                | 27                                                                                | 16                                                                                | 109                                                                               | 60                                                                                | 87                                                                                | 16                                                                                  | 391                                                                                 | 27                                                                                  | 22                                                                                  | 565                                                                                 | 5                                                                                   |
| Shared Lane Traffic (%)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Group Flow (vph)      | 0                                                                                 | 54                                                                                | 0                                                                                 | 0                                                                                 | 256                                                                               | 0                                                                                 | 16                                                                                  | 418                                                                                 | 0                                                                                   | 22                                                                                  | 570                                                                                 | 0                                                                                   |
| Enter Blocked Intersection | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  |
| Lane Alignment             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                                | Left                                                                                | Right                                                                               | Left                                                                                | Left                                                                                | Right                                                                               |
| Median Width(m)            |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                     | 3.7                                                                                 |                                                                                     |                                                                                     | 3.7                                                                                 |                                                                                     |
| Link Offset(m)             |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                     | 0.0                                                                                 |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |
| Crosswalk Width(m)         |                                                                                   | 4.8                                                                               |                                                                                   |                                                                                   | 4.8                                                                               |                                                                                   |                                                                                     | 4.8                                                                                 |                                                                                     |                                                                                     | 4.8                                                                                 |                                                                                     |
| Two way Left Turn Lane     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Headway Factor             | 0.99                                                                              | 0.99                                                                              | 0.99                                                                              | 0.99                                                                              | 0.99                                                                              | 0.99                                                                              | 0.99                                                                                | 0.99                                                                                | 0.99                                                                                | 0.99                                                                                | 0.99                                                                                | 0.99                                                                                |
| Turning Speed (k/h)        | 25                                                                                |                                                                                   | 15                                                                                | 25                                                                                |                                                                                   | 15                                                                                | 25                                                                                  |                                                                                     | 15                                                                                  | 25                                                                                  |                                                                                     | 15                                                                                  |
| Turn Type                  | Perm                                                                              | NA                                                                                |                                                                                   | Perm                                                                              | NA                                                                                |                                                                                   | Perm                                                                                | NA                                                                                  |                                                                                     | Perm                                                                                | NA                                                                                  |                                                                                     |
| Protected Phases           |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                     | 2                                                                                   |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |
| Permitted Phases           | 4                                                                                 |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 2                                                                                   |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |                                                                                     |
| Detector Phase             | 4                                                                                 | 4                                                                                 |                                                                                   | 4                                                                                 | 4                                                                                 |                                                                                   | 2                                                                                   | 2                                                                                   |                                                                                     | 2                                                                                   | 2                                                                                   |                                                                                     |
| Switch Phase               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)        | 10.0                                                                              | 10.0                                                                              |                                                                                   | 10.0                                                                              | 10.0                                                                              |                                                                                   | 10.0                                                                                | 10.0                                                                                |                                                                                     | 10.0                                                                                | 10.0                                                                                |                                                                                     |
| Minimum Split (s)          | 24.0                                                                              | 24.0                                                                              |                                                                                   | 24.0                                                                              | 24.0                                                                              |                                                                                   | 24.0                                                                                | 24.0                                                                                |                                                                                     | 24.0                                                                                | 24.0                                                                                |                                                                                     |
| Total Split (s)            | 24.0                                                                              | 24.0                                                                              |                                                                                   | 24.0                                                                              | 24.0                                                                              |                                                                                   | 36.0                                                                                | 36.0                                                                                |                                                                                     | 36.0                                                                                | 36.0                                                                                |                                                                                     |
| Total Split (%)            | 40.0%                                                                             | 40.0%                                                                             |                                                                                   | 40.0%                                                                             | 40.0%                                                                             |                                                                                   | 60.0%                                                                               | 60.0%                                                                               |                                                                                     | 60.0%                                                                               | 60.0%                                                                               |                                                                                     |
| Maximum Green (s)          | 18.0                                                                              | 18.0                                                                              |                                                                                   | 18.0                                                                              | 18.0                                                                              |                                                                                   | 30.0                                                                                | 30.0                                                                                |                                                                                     | 30.0                                                                                | 30.0                                                                                |                                                                                     |
| Yellow Time (s)            | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                                 | 4.0                                                                                 |                                                                                     | 4.0                                                                                 | 4.0                                                                                 |                                                                                     |
| All-Red Time (s)           | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0                                                                               | 2.0                                                                               |                                                                                   | 2.0                                                                                 | 2.0                                                                                 |                                                                                     | 2.0                                                                                 | 2.0                                                                                 |                                                                                     |
| Lost Time Adjust (s)       |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |
| Total Lost Time (s)        |                                                                                   | 6.0                                                                               |                                                                                   |                                                                                   | 6.0                                                                               |                                                                                   | 6.0                                                                                 | 6.0                                                                                 |                                                                                     | 6.0                                                                                 | 6.0                                                                                 |                                                                                     |
| Lead/Lag                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lead-Lag Optimize?         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Vehicle Extension (s)      | 3.0                                                                               | 3.0                                                                               |                                                                                   | 3.0                                                                               | 3.0                                                                               |                                                                                   | 3.0                                                                                 | 3.0                                                                                 |                                                                                     | 3.0                                                                                 | 3.0                                                                                 |                                                                                     |
| Recall Mode                | None                                                                              | None                                                                              |                                                                                   | None                                                                              | None                                                                              |                                                                                   | None                                                                                | None                                                                                |                                                                                     | None                                                                                | None                                                                                |                                                                                     |
| Walk Time (s)              | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                                 | 7.0                                                                                 |                                                                                     | 7.0                                                                                 | 7.0                                                                                 |                                                                                     |
| Flash Dont Walk (s)        | 11.0                                                                              | 11.0                                                                              |                                                                                   | 11.0                                                                              | 11.0                                                                              |                                                                                   | 11.0                                                                                | 11.0                                                                                |                                                                                     | 11.0                                                                                | 11.0                                                                                |                                                                                     |
| Pedestrian Calls (#/hr)    | 5                                                                                 | 5                                                                                 |                                                                                   | 5                                                                                 | 5                                                                                 |                                                                                   | 5                                                                                   | 5                                                                                   |                                                                                     | 5                                                                                   | 5                                                                                   |                                                                                     |



Lanes, Volumes, Timings  
10: Division Rd & Road 3E

PM Peak Hour  
2027 Total Future Alt-1b

|                        |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group             | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Act Effect Green (s)   |                                                                                   | 14.4                                                                              |                                                                                   |                                                                                   | 14.4                                                                              |                                                                                   | 23.6                                                                               | 23.6                                                                                |                                                                                     | 23.6                                                                                | 23.6                                                                                |                                                                                     |
| Actuated g/C Ratio     |                                                                                   | 0.35                                                                              |                                                                                   |                                                                                   | 0.35                                                                              |                                                                                   | 0.57                                                                               | 0.57                                                                                |                                                                                     | 0.57                                                                                | 0.57                                                                                |                                                                                     |
| v/c Ratio              |                                                                                   | 0.09                                                                              |                                                                                   |                                                                                   | 0.47                                                                              |                                                                                   | 0.04                                                                               | 0.39                                                                                |                                                                                     | 0.04                                                                                | 0.53                                                                                |                                                                                     |
| Control Delay          |                                                                                   | 11.5                                                                              |                                                                                   |                                                                                   | 16.0                                                                              |                                                                                   | 7.9                                                                                | 9.7                                                                                 |                                                                                     | 7.8                                                                                 | 11.6                                                                                |                                                                                     |
| Queue Delay            |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                                | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |
| Total Delay            |                                                                                   | 11.5                                                                              |                                                                                   |                                                                                   | 16.0                                                                              |                                                                                   | 7.9                                                                                | 9.7                                                                                 |                                                                                     | 7.8                                                                                 | 11.6                                                                                |                                                                                     |
| LOS                    |                                                                                   | B                                                                                 |                                                                                   |                                                                                   | B                                                                                 |                                                                                   | A                                                                                  | A                                                                                   |                                                                                     | A                                                                                   | B                                                                                   |                                                                                     |
| Approach Delay         |                                                                                   | 11.5                                                                              |                                                                                   |                                                                                   | 16.0                                                                              |                                                                                   |                                                                                    | 9.6                                                                                 |                                                                                     |                                                                                     | 11.5                                                                                |                                                                                     |
| Approach LOS           |                                                                                   | B                                                                                 |                                                                                   |                                                                                   | B                                                                                 |                                                                                   |                                                                                    | A                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |
| Queue Length 50th (m)  |                                                                                   | 2.2                                                                               |                                                                                   |                                                                                   | 14.0                                                                              |                                                                                   | 0.7                                                                                | 20.6                                                                                |                                                                                     | 0.9                                                                                 | 31.9                                                                                |                                                                                     |
| Queue Length 95th (m)  |                                                                                   | 10.1                                                                              |                                                                                   |                                                                                   | 40.0                                                                              |                                                                                   | 3.5                                                                                | 47.8                                                                                |                                                                                     | 4.3                                                                                 | 72.3                                                                                |                                                                                     |
| Internal Link Dist (m) |                                                                                   | 8.0                                                                               |                                                                                   |                                                                                   | 2009.4                                                                            |                                                                                   |                                                                                    | 54.4                                                                                |                                                                                     |                                                                                     | 57.8                                                                                |                                                                                     |
| Turn Bay Length (m)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Base Capacity (vph)    |                                                                                   | 847                                                                               |                                                                                   |                                                                                   | 789                                                                               |                                                                                   | 493                                                                                | 1340                                                                                |                                                                                     | 683                                                                                 | 1351                                                                                |                                                                                     |
| 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                                                                              |                                                                                   |                                                                                   | 0.32                                                                              |                                                                                   | 0.03                                                                               | 0.31                                                                                |                                                                                     | 0.03                                                                                | 0.42                                                                                |                                                                                     |

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 41.7

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.53

Intersection Signal Delay: 11.7

Intersection LOS: B

Intersection Capacity Utilization 57.7%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 10: Division Rd & Road 3E



| Intersection             |        |       |        |                 |        |       |        |      |      |       |      |      |
|--------------------------|--------|-------|--------|-----------------|--------|-------|--------|------|------|-------|------|------|
| Int Delay, s/veh         | 3.3    |       |        |                 |        |       |        |      |      |       |      |      |
| Movement                 | EBL    | EBT   | EBR    | WBL             | WBT    | WBR   | NBL    | NBT  | NBR  | SBL   | SBT  | SBR  |
| Lane Configurations      |        | ↕     |        | ↕               | ↕      |       |        | ↕    |      |       | ↕    |      |
| Traffic Vol, veh/h       | 5      | 30    | 10     | 35              | 25     | 25    | 5      | 480  | 120  | 40    | 315  | 5    |
| Future Vol, veh/h        | 5      | 30    | 10     | 35              | 25     | 25    | 5      | 480  | 120  | 40    | 315  | 5    |
| Conflicting Peds, #/hr   | 0      | 0     | 0      | 0               | 0      | 0     | 0      | 0    | 0    | 0     | 0    | 0    |
| Sign Control             | Stop   | Stop  | Stop   | Stop            | Stop   | Stop  | Free   | Free | Free | Free  | Free | Free |
| RT Channelized           | -      | -     | None   | -               | -      | None  | -      | -    | None | -     | -    | None |
| Storage Length           | -      | -     | -      | 0               | -      | -     | -      | -    | -    | -     | -    | -    |
| Veh in Median Storage, # | -      | 0     | -      | -               | 0      | -     | -      | 0    | -    | -     | 0    | -    |
| Grade, %                 | -      | 0     | -      | -               | 0      | -     | -      | 0    | -    | -     | 0    | -    |
| Peak Hour Factor         | 92     | 92    | 92     | 92              | 92     | 92    | 92     | 92   | 92   | 92    | 92   | 92   |
| Heavy Vehicles, %        | 2      | 2     | 2      | 2               | 2      | 2     | 2      | 2    | 2    | 2     | 2    | 2    |
| Mvmt Flow                | 5      | 33    | 11     | 38              | 27     | 27    | 5      | 522  | 130  | 43    | 342  | 5    |
| Major/Minor              | Minor2 |       | Minor1 |                 | Major1 |       | Major2 |      |      |       |      |      |
| Conflicting Flow All     | 1055   | 1093  | 345    | 1050            | 1030   | 587   | 347    | 0    | 0    | 652   | 0    | 0    |
| Stage 1                  | 431    | 431   | -      | 597             | 597    | -     | -      | -    | -    | -     | -    | -    |
| Stage 2                  | 624    | 662   | -      | 453             | 433    | -     | -      | -    | -    | -     | -    | -    |
| Critical Hdwy            | 7.12   | 6.52  | 6.22   | 7.12            | 6.52   | 6.22  | 4.12   | -    | -    | 4.12  | -    | -    |
| Critical Hdwy Stg 1      | 6.12   | 5.52  | -      | 6.12            | 5.52   | -     | -      | -    | -    | -     | -    | -    |
| Critical Hdwy Stg 2      | 6.12   | 5.52  | -      | 6.12            | 5.52   | -     | -      | -    | -    | -     | -    | -    |
| Follow-up Hdwy           | 3.518  | 4.018 | 3.318  | 3.518           | 4.018  | 3.318 | 2.218  | -    | -    | 2.218 | -    | -    |
| Pot Cap-1 Maneuver       | 204    | 214   | 698    | 205             | 233    | 510   | 1212   | -    | -    | 935   | -    | -    |
| Stage 1                  | 603    | 583   | -      | 490             | 491    | -     | -      | -    | -    | -     | -    | -    |
| Stage 2                  | 473    | 459   | -      | 586             | 582    | -     | -      | -    | -    | -     | -    | -    |
| Platoon blocked, %       |        |       |        |                 |        |       |        | -    | -    | -     | -    | -    |
| Mov Cap-1 Maneuver       | 166    | 200   | 698    | 168             | 218    | 510   | 1212   | -    | -    | 935   | -    | -    |
| Mov Cap-2 Maneuver       | 166    | 200   | -      | 168             | 218    | -     | -      | -    | -    | -     | -    | -    |
| Stage 1                  | 599    | 550   | -      | 487             | 488    | -     | -      | -    | -    | -     | -    | -    |
| Stage 2                  | 420    | 456   | -      | 512             | 549    | -     | -      | -    | -    | -     | -    | -    |
| Approach                 | EB     |       | WB     |                 | NB     |       | SB     |      |      |       |      |      |
| HCM Control Delay, s     | 24.7   |       | 24.8   |                 | 0.1    |       | 1      |      |      |       |      |      |
| HCM LOS                  | C      |       | C      |                 |        |       |        |      |      |       |      |      |
| Minor Lane/Major Mvmt    | NBL    | NBT   | NBR    | EBLn1WBLn1WBLn2 | SBL    | SBT   | SBR    |      |      |       |      |      |
| Capacity (veh/h)         | 1212   | -     | -      | 231             | 168    | 305   | 935    | -    | -    |       |      |      |
| HCM Lane V/C Ratio       | 0.004  | -     | -      | 0.212           | 0.226  | 0.178 | 0.047  | -    | -    |       |      |      |
| HCM Control Delay (s)    | 8      | 0     | -      | 24.7            | 32.6   | 19.3  | 9      | 0    | -    |       |      |      |
| HCM Lane LOS             | A      | A     | -      | C               | D      | C     | A      | A    | -    |       |      |      |
| HCM 95th %tile Q(veh)    | 0      | -     | -      | 0.8             | 0.8    | 0.6   | 0.1    | -    | -    |       |      |      |

| Intersection             |        |       |        |                   |       |        |       |      |        |       |      |      |
|--------------------------|--------|-------|--------|-------------------|-------|--------|-------|------|--------|-------|------|------|
| Int Delay, s/veh         | 4.8    |       |        |                   |       |        |       |      |        |       |      |      |
| Movement                 | EBL    | EBT   | EBR    | WBL               | WBT   | WBR    | NBL   | NBT  | NBR    | SBL   | SBT  | SBR  |
| Lane Configurations      |        | ↕     |        | ↕                 | ↕     |        |       | ↕    |        |       | ↕    |      |
| Traffic Vol, veh/h       | 10     | 25    | 15     | 50                | 55    | 30     | 15    | 360  | 25     | 20    | 520  | 5    |
| Future Vol, veh/h        | 10     | 25    | 15     | 50                | 55    | 30     | 15    | 360  | 25     | 20    | 520  | 5    |
| Conflicting Peds, #/hr   | 0      | 0     | 0      | 0                 | 0     | 0      | 0     | 0    | 0      | 0     | 0    | 0    |
| Sign Control             | Stop   | Stop  | Stop   | Stop              | Stop  | Stop   | Free  | Free | Free   | Free  | Free | Free |
| RT Channelized           | -      | -     | None   | -                 | -     | None   | -     | -    | None   | -     | -    | None |
| Storage Length           | -      | -     | -      | 0                 | -     | -      | -     | -    | -      | -     | -    | -    |
| Veh in Median Storage, # | -      | 0     | -      | -                 | 0     | -      | -     | 0    | -      | -     | 0    | -    |
| Grade, %                 | -      | 0     | -      | -                 | 0     | -      | -     | 0    | -      | -     | 0    | -    |
| Peak Hour Factor         | 92     | 92    | 92     | 92                | 92    | 92     | 92    | 92   | 92     | 92    | 92   | 92   |
| Heavy Vehicles, %        | 2      | 2     | 2      | 2                 | 2     | 2      | 2     | 2    | 2      | 2     | 2    | 2    |
| Mvmt Flow                | 11     | 27    | 16     | 54                | 60    | 33     | 16    | 391  | 27     | 22    | 565  | 5    |
|                          |        |       |        |                   |       |        |       |      |        |       |      |      |
| Major/Minor              | Minor2 |       | Minor1 |                   |       | Major1 |       |      | Major2 |       |      |      |
| Conflicting Flow All     | 1095   | 1062  | 568    | 1070              | 1051  | 405    | 570   | 0    | 0      | 418   | 0    | 0    |
| Stage 1                  | 612    | 612   | -      | 437               | 437   | -      | -     | -    | -      | -     | -    | -    |
| Stage 2                  | 483    | 450   | -      | 633               | 614   | -      | -     | -    | -      | -     | -    | -    |
| Critical Hdwy            | 7.12   | 6.52  | 6.22   | 7.12              | 6.52  | 6.22   | 4.12  | -    | -      | 4.12  | -    | -    |
| Critical Hdwy Stg 1      | 6.12   | 5.52  | -      | 6.12              | 5.52  | -      | -     | -    | -      | -     | -    | -    |
| Critical Hdwy Stg 2      | 6.12   | 5.52  | -      | 6.12              | 5.52  | -      | -     | -    | -      | -     | -    | -    |
| Follow-up Hdwy           | 3.518  | 4.018 | 3.318  | 3.518             | 4.018 | 3.318  | 2.218 | -    | -      | 2.218 | -    | -    |
| Pot Cap-1 Maneuver       | 191    | 223   | 522    | 199               | 227   | 646    | 1002  | -    | -      | 1141  | -    | -    |
| Stage 1                  | 480    | 484   | -      | 598               | 579   | -      | -     | -    | -      | -     | -    | -    |
| Stage 2                  | 565    | 572   | -      | 468               | 483   | -      | -     | -    | -      | -     | -    | -    |
| Platoon blocked, %       |        |       |        |                   |       |        |       | -    | -      |       | -    | -    |
| Mov Cap-1 Maneuver       | 138    | 212   | 522    | 168               | 216   | 646    | 1002  | -    | -      | 1141  | -    | -    |
| Mov Cap-2 Maneuver       | 138    | 212   | -      | 168               | 216   | -      | -     | -    | -      | -     | -    | -    |
| Stage 1                  | 470    | 470   | -      | 585               | 567   | -      | -     | -    | -      | -     | -    | -    |
| Stage 2                  | 470    | 560   | -      | 415               | 469   | -      | -     | -    | -      | -     | -    | -    |
|                          |        |       |        |                   |       |        |       |      |        |       |      |      |
|                          |        |       |        |                   |       |        |       |      |        |       |      |      |
| Approach                 | EB     |       | WB     |                   |       | NB     |       |      | SB     |       |      |      |
| HCM Control Delay, s     | 25.7   |       | 28.5   |                   |       | 0.3    |       |      | 0.3    |       |      |      |
| HCM LOS                  | D      |       | D      |                   |       |        |       |      |        |       |      |      |
|                          |        |       |        |                   |       |        |       |      |        |       |      |      |
| Minor Lane/Major Mvmt    | NBL    | NBT   | NBR    | EBLn1WBLn1WBLn2   | SBL   | SBT    | SBR   |      |        |       |      |      |
| Capacity (veh/h)         | 1002   | -     | -      | 228 168 282       | 1141  | -      | -     |      |        |       |      |      |
| HCM Lane V/C Ratio       | 0.016  | -     | -      | 0.238 0.323 0.328 | 0.019 | -      | -     |      |        |       |      |      |
| HCM Control Delay (s)    | 8.7    | 0     | -      | 25.7 36.4 23.9    | 8.2   | 0      | -     |      |        |       |      |      |
| HCM Lane LOS             | A      | A     | -      | D E C             | A     | A      | -     |      |        |       |      |      |
| HCM 95th %tile O(veh)    | 0.1    | -     | -      | 0.9 1.3 1.4       | 0.1   | -      | -     |      |        |       |      |      |

| Intersection             |        |                                                                                   |        |                                                                                   |                                                                                   |        |       |                                                                                   |        |       |                                                                                     |      |
|--------------------------|--------|-----------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|--------|-------|-------------------------------------------------------------------------------------|------|
| Int Delay, s/veh         | 4.4    |                                                                                   |        |                                                                                   |                                                                                   |        |       |                                                                                   |        |       |                                                                                     |      |
| Movement                 | EBL    | EBT                                                                               | EBR    | WBL                                                                               | WBT                                                                               | WBR    | NBL   | NBT                                                                               | NBR    | SBL   | SBT                                                                                 | SBR  |
| Lane Configurations      |        |  |        |  |  |        |       |  |        |       |  |      |
| Traffic Vol, veh/h       | 5      | 30                                                                                | 10     | 35                                                                                | 25                                                                                | 25     | 5     | 480                                                                               | 165    | 90    | 315                                                                                 | 5    |
| Future Vol, veh/h        | 5      | 30                                                                                | 10     | 35                                                                                | 25                                                                                | 25     | 5     | 480                                                                               | 165    | 90    | 315                                                                                 | 5    |
| Conflicting Peds, #/hr   | 0      | 0                                                                                 | 0      | 0                                                                                 | 0                                                                                 | 0      | 0     | 0                                                                                 | 0      | 0     | 0                                                                                   | 0    |
| Sign Control             | Stop   | Stop                                                                              | Stop   | Stop                                                                              | Stop                                                                              | Stop   | Free  | Free                                                                              | Free   | Free  | Free                                                                                | Free |
| RT Channelized           | -      | -                                                                                 | None   | -                                                                                 | -                                                                                 | None   | -     | -                                                                                 | None   | -     | -                                                                                   | None |
| Storage Length           | -      | -                                                                                 | -      | 0                                                                                 | -                                                                                 | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Veh in Median Storage, # | -      | 0                                                                                 | -      | -                                                                                 | 0                                                                                 | -      | -     | 0                                                                                 | -      | -     | 0                                                                                   | -    |
| Grade, %                 | -      | 0                                                                                 | -      | -                                                                                 | 0                                                                                 | -      | -     | 0                                                                                 | -      | -     | 0                                                                                   | -    |
| Peak Hour Factor         | 92     | 92                                                                                | 92     | 92                                                                                | 92                                                                                | 92     | 92    | 92                                                                                | 92     | 92    | 92                                                                                  | 92   |
| Heavy Vehicles, %        | 2      | 2                                                                                 | 2      | 2                                                                                 | 2                                                                                 | 2      | 2     | 2                                                                                 | 2      | 2     | 2                                                                                   | 2    |
| Mvmt Flow                | 5      | 33                                                                                | 11     | 38                                                                                | 27                                                                                | 27     | 5     | 522                                                                               | 179    | 98    | 342                                                                                 | 5    |
|                          |        |                                                                                   |        |                                                                                   |                                                                                   |        |       |                                                                                   |        |       |                                                                                     |      |
| Major/Minor              | Minor2 |                                                                                   | Minor1 |                                                                                   |                                                                                   | Major1 |       |                                                                                   | Major2 |       |                                                                                     |      |
| Conflicting Flow All     | 1190   | 1252                                                                              | 345    | 1185                                                                              | 1165                                                                              | 612    | 347   | 0                                                                                 | 0      | 701   | 0                                                                                   | 0    |
| Stage 1                  | 541    | 541                                                                               | -      | 622                                                                               | 622                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Stage 2                  | 649    | 711                                                                               | -      | 563                                                                               | 543                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Critical Hdwy            | 7.12   | 6.52                                                                              | 6.22   | 7.12                                                                              | 6.52                                                                              | 6.22   | 4.12  | -                                                                                 | -      | 4.12  | -                                                                                   | -    |
| Critical Hdwy Stg 1      | 6.12   | 5.52                                                                              | -      | 6.12                                                                              | 5.52                                                                              | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Critical Hdwy Stg 2      | 6.12   | 5.52                                                                              | -      | 6.12                                                                              | 5.52                                                                              | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Follow-up Hdwy           | 3.518  | 4.018                                                                             | 3.318  | 3.518                                                                             | 4.018                                                                             | 3.318  | 2.218 | -                                                                                 | -      | 2.218 | -                                                                                   | -    |
| Pot Cap-1 Maneuver       | 165    | 172                                                                               | 698    | 166                                                                               | 194                                                                               | 493    | 1212  | -                                                                                 | -      | 896   | -                                                                                   | -    |
| Stage 1                  | 525    | 521                                                                               | -      | 474                                                                               | 479                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Stage 2                  | 458    | 436                                                                               | -      | 511                                                                               | 520                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Platoon blocked, %       |        |                                                                                   |        |                                                                                   |                                                                                   |        |       | -                                                                                 | -      |       | -                                                                                   | -    |
| Mov Cap-1 Maneuver       | 122    | 148                                                                               | 698    | 122                                                                               | 166                                                                               | 493    | 1212  | -                                                                                 | -      | 896   | -                                                                                   | -    |
| Mov Cap-2 Maneuver       | 122    | 148                                                                               | -      | 122                                                                               | 166                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Stage 1                  | 521    | 450                                                                               | -      | 471                                                                               | 476                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Stage 2                  | 405    | 433                                                                               | -      | 403                                                                               | 449                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
|                          |        |                                                                                   |        |                                                                                   |                                                                                   |        |       |                                                                                   |        |       |                                                                                     |      |
| Approach                 | EB     |                                                                                   | WB     |                                                                                   |                                                                                   | NB     |       |                                                                                   | SB     |       |                                                                                     |      |
| HCM Control Delay, s     | 33.6   |                                                                                   | 33.3   |                                                                                   |                                                                                   | 0.1    |       |                                                                                   | 2.1    |       |                                                                                     |      |
| HCM LOS                  | D      |                                                                                   | D      |                                                                                   |                                                                                   |        |       |                                                                                   |        |       |                                                                                     |      |
|                          |        |                                                                                   |        |                                                                                   |                                                                                   |        |       |                                                                                   |        |       |                                                                                     |      |
| Minor Lane/Major Mvmt    | NBL    | NBT                                                                               | NBR    | EBLn1WBLn1WBLn2                                                                   | SBL                                                                               | SBT    | SBR   |                                                                                   |        |       |                                                                                     |      |
| Capacity (veh/h)         | 1212   | -                                                                                 | -      | 174                                                                               | 122                                                                               | 248    | 896   | -                                                                                 | -      |       |                                                                                     |      |
| HCM Lane V/C Ratio       | 0.004  | -                                                                                 | -      | 0.281                                                                             | 0.312                                                                             | 0.219  | 0.109 | -                                                                                 | -      |       |                                                                                     |      |
| HCM Control Delay (s)    | 8      | 0                                                                                 | -      | 33.6                                                                              | 47.3                                                                              | 23.5   | 9.5   | 0                                                                                 | -      |       |                                                                                     |      |
| HCM Lane LOS             | A      | A                                                                                 | -      | D                                                                                 | E                                                                                 | C      | A     | A                                                                                 | -      |       |                                                                                     |      |
| HCM 95th %tile Q(veh)    | 0      | -                                                                                 | -      | 1.1                                                                               | 1.2                                                                               | 0.8    | 0.4   | -                                                                                 | -      |       |                                                                                     |      |

| Intersection             |        |                                                                                   |        |                                                                                   |                                                                                   |        |       |                                                                                   |        |       |                                                                                     |      |
|--------------------------|--------|-----------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------|-------|-----------------------------------------------------------------------------------|--------|-------|-------------------------------------------------------------------------------------|------|
| Int Delay, s/veh         | 8.5    |                                                                                   |        |                                                                                   |                                                                                   |        |       |                                                                                   |        |       |                                                                                     |      |
| Movement                 | EBL    | EBT                                                                               | EBR    | WBL                                                                               | WBT                                                                               | WBR    | NBL   | NBT                                                                               | NBR    | SBL   | SBT                                                                                 | SBR  |
| Lane Configurations      |        |  |        |  |  |        |       |  |        |       |  |      |
| Traffic Vol, veh/h       | 10     | 25                                                                                | 15     | 100                                                                               | 55                                                                                | 80     | 15    | 360                                                                               | 25     | 20    | 520                                                                                 | 5    |
| Future Vol, veh/h        | 10     | 25                                                                                | 15     | 100                                                                               | 55                                                                                | 80     | 15    | 360                                                                               | 25     | 20    | 520                                                                                 | 5    |
| Conflicting Peds, #/hr   | 0      | 0                                                                                 | 0      | 0                                                                                 | 0                                                                                 | 0      | 0     | 0                                                                                 | 0      | 0     | 0                                                                                   | 0    |
| Sign Control             | Stop   | Stop                                                                              | Stop   | Stop                                                                              | Stop                                                                              | Stop   | Free  | Free                                                                              | Free   | Free  | Free                                                                                | Free |
| RT Channelized           | -      | -                                                                                 | None   | -                                                                                 | -                                                                                 | None   | -     | -                                                                                 | None   | -     | -                                                                                   | None |
| Storage Length           | -      | -                                                                                 | -      | 0                                                                                 | -                                                                                 | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Veh in Median Storage, # | -      | 0                                                                                 | -      | -                                                                                 | 0                                                                                 | -      | -     | 0                                                                                 | -      | -     | 0                                                                                   | -    |
| Grade, %                 | -      | 0                                                                                 | -      | -                                                                                 | 0                                                                                 | -      | -     | 0                                                                                 | -      | -     | 0                                                                                   | -    |
| Peak Hour Factor         | 92     | 92                                                                                | 92     | 92                                                                                | 92                                                                                | 92     | 92    | 92                                                                                | 92     | 92    | 92                                                                                  | 92   |
| Heavy Vehicles, %        | 2      | 2                                                                                 | 2      | 2                                                                                 | 2                                                                                 | 2      | 2     | 2                                                                                 | 2      | 2     | 2                                                                                   | 2    |
| Mvmt Flow                | 11     | 27                                                                                | 16     | 109                                                                               | 60                                                                                | 87     | 16    | 391                                                                               | 27     | 22    | 565                                                                                 | 5    |
|                          |        |                                                                                   |        |                                                                                   |                                                                                   |        |       |                                                                                   |        |       |                                                                                     |      |
| Major/Minor              | Minor2 |                                                                                   | Minor1 |                                                                                   |                                                                                   | Major1 |       |                                                                                   | Major2 |       |                                                                                     |      |
| Conflicting Flow All     | 1122   | 1062                                                                              | 568    | 1070                                                                              | 1051                                                                              | 405    | 570   | 0                                                                                 | 0      | 418   | 0                                                                                   | 0    |
| Stage 1                  | 612    | 612                                                                               | -      | 437                                                                               | 437                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Stage 2                  | 510    | 450                                                                               | -      | 633                                                                               | 614                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Critical Hdwy            | 7.12   | 6.52                                                                              | 6.22   | 7.12                                                                              | 6.52                                                                              | 6.22   | 4.12  | -                                                                                 | -      | 4.12  | -                                                                                   | -    |
| Critical Hdwy Stg 1      | 6.12   | 5.52                                                                              | -      | 6.12                                                                              | 5.52                                                                              | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Critical Hdwy Stg 2      | 6.12   | 5.52                                                                              | -      | 6.12                                                                              | 5.52                                                                              | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Follow-up Hdwy           | 3.518  | 4.018                                                                             | 3.318  | 3.518                                                                             | 4.018                                                                             | 3.318  | 2.218 | -                                                                                 | -      | 2.218 | -                                                                                   | -    |
| Pot Cap-1 Maneuver       | 183    | 223                                                                               | 522    | 199                                                                               | 227                                                                               | 646    | 1002  | -                                                                                 | -      | 1141  | -                                                                                   | -    |
| Stage 1                  | 480    | 484                                                                               | -      | 598                                                                               | 579                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Stage 2                  | 546    | 572                                                                               | -      | 468                                                                               | 483                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Platoon blocked, %       |        |                                                                                   |        |                                                                                   |                                                                                   |        |       | -                                                                                 | -      |       | -                                                                                   | -    |
| Mov Cap-1 Maneuver       | 120    | 212                                                                               | 522    | 168                                                                               | 216                                                                               | 646    | 1002  | -                                                                                 | -      | 1141  | -                                                                                   | -    |
| Mov Cap-2 Maneuver       | 120    | 212                                                                               | -      | 168                                                                               | 216                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Stage 1                  | 470    | 470                                                                               | -      | 585                                                                               | 567                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
| Stage 2                  | 414    | 560                                                                               | -      | 415                                                                               | 469                                                                               | -      | -     | -                                                                                 | -      | -     | -                                                                                   | -    |
|                          |        |                                                                                   |        |                                                                                   |                                                                                   |        |       |                                                                                   |        |       |                                                                                     |      |
| Approach                 | EB     |                                                                                   | WB     |                                                                                   |                                                                                   | NB     |       |                                                                                   | SB     |       |                                                                                     |      |
| HCM Control Delay, s     | 27     |                                                                                   | 37.7   |                                                                                   |                                                                                   | 0.3    |       |                                                                                   | 0.3    |       |                                                                                     |      |
| HCM LOS                  | D      |                                                                                   | E      |                                                                                   |                                                                                   |        |       |                                                                                   |        |       |                                                                                     |      |
|                          |        |                                                                                   |        |                                                                                   |                                                                                   |        |       |                                                                                   |        |       |                                                                                     |      |
| Minor Lane/Major Mvmt    | NBL    | NBT                                                                               | NBR    | EBLn1WBLn1WBLn2                                                                   | SBL                                                                               | SBT    | SBR   |                                                                                   |        |       |                                                                                     |      |
| Capacity (veh/h)         | 1002   | -                                                                                 | -      | 217 168 357                                                                       | 1141                                                                              | -      | -     |                                                                                   |        |       |                                                                                     |      |
| HCM Lane V/C Ratio       | 0.016  | -                                                                                 | -      | 0.25 0.647 0.411                                                                  | 0.019                                                                             | -      | -     |                                                                                   |        |       |                                                                                     |      |
| HCM Control Delay (s)    | 8.7    | 0                                                                                 | -      | 27 59 21.9                                                                        | 8.2                                                                               | 0      | -     |                                                                                   |        |       |                                                                                     |      |
| HCM Lane LOS             | A      | A                                                                                 | -      | D F C                                                                             | A                                                                                 | A      | -     |                                                                                   |        |       |                                                                                     |      |
| HCM 95th %tile Q(veh)    | 0.1    | -                                                                                 | -      | 1 3.7 1.9                                                                         | 0.1                                                                               | -      | -     |                                                                                   |        |       |                                                                                     |      |